

GEOGRAPHY

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CONTENTS.

| | Page |
|--|------|
| GEOGRAPHY AND THE MUSEUM. Address to the Geographical Association. | |
| Sir Harry Lindsay | 1 |
| SETTLEMENT IN SUSSEX, 1840-1940. W. H. Parker.. .. . | 9 |
| TREGARON, A WELSH MARKET TOWN. Emrys Jones | 20 |
| GEOGRAPHIC APPROACHES TO SOCIAL EDUCATION. Henry J. Warman | 32 |
| ECONOMIC GEOGRAPHY AND GEONOMICS. C. J. Robertson | 38 |
| POST-WAR PROGRAMME OF THE ORDNANCE SURVEY. T. C. Warrington .. | 41 |
| OBITUARY | 44 |
| CORRESPONDENCE | 47 |
| GEOGRAPHICAL ASSOCIATION | 52 |
| REVIEWS OF BOOKS | 58 |
| GEOGRAPHICAL ARTICLES IN MAGAZINES RECEIVED | 73 |

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GEOGRAPHY AND THE MUSEUM

ADDRESS TO THE GEOGRAPHICAL ASSOCIATION

BY SIR HARRY LINDSAY, President, 1949.

LET me make it quite clear at the outset that this address will not attempt to press the idea of a museum dealing solely with geography. You will find the germ of such an idea in the museum of the Royal Geographical Society, but it still awaits development, even there, on new and up-to-date lines not yet fully worked out. My aim is rather to take as my theme the objectives of the normal run of museums—whether they be national or purely local in their scope, or even international as in a museum such as the *Musée de l'Homme* in Paris—and to show how geography can be adapted to serve the museum's objectives.

And let me remind you that whereas geography is from one point of view a science, particularly in its cartographic aspects, it is also one of the arts, to the extent to which it exerts its universal and almost motherly influence, through geology, meteorology and climatology, upon the growth of forests and plantations, crops and pasturage, and ultimately upon the development of fish, flesh and fowl and of the customs and characters of mankind. From this point of view the art of human living claims geography as a great art-mistress. The beauty of the countryside, or of the ocean, has been a constant inspiration to the artist and indeed to mankind at large. Mountain and tree alike are nature's spires, pointers to human aspiration. It will not do to forget this aspect of geography in its more scientific and, may I say, more secular aspects.

Indeed, this constant interplay of science and art faces us at every turn of life and frequently poses conundrums which might be solved quite easily by reference either to science or to art, but whose solution is rendered more difficult but more exciting because both science and art enter into them; so that, if we are to arrive at solutions which are truthful and therefore satisfying, we must always try to reconcile the two. We must never be loyal to science at the expense of art or vice versa. Indeed the reconciliation of science with art, thinking with feeling, in our daily life and conversation constitutes one of the major problems of the good life.

In this connection may I draw your attention to a most happy example which is provided by the other half of my subject, namely the museum? As you all know, the museum is so called because it is, so to speak, a haunt of the muses. When the Greeks invented, or discovered, the nine muses, they very wisely identified one of them, Urania, with a science, namely astronomy, whilst the other eight muses were all related to the arts. Perhaps one of science to eight of art represented roughly the proportion of these two human activities in the intellectual make-up of the ancient Greek. Anyway

I hope you will agree with me that the reconciliation of science with art is a fundamental human problem and that the museum is one happy solution of that problem.

There are, of course, museums which are mainly concerned with one or other of the sciences—with zoology or botany, with mineralogy or with technology (like the Science museum in London). And as a natural consequence the display of the exhibits follows the correct scientific classification. Nevertheless, the wise curator will always be careful to reconcile science with art, if it be only the art of attractive display. There are right ways of exhibiting specimens and there are wrong ways, and the difference between the two is determined as much by art as by science. After all, the art of museum display—or shall we call it museum technique?—is basically the art of telling a story, for every exhibit is just a paragraph in the main story, whether of nature or of human nature, which the curator is trying to tell.

And if we turn from the museum having science or a science for its subject to the art gallery, which is the museum having art or an art for its subject, the same principle is at stake, save that the scientific element has faded out. It is now the picture or the pottery or metal-work which provides the specimens out of which the story is woven. The artistic handling of the art-theme is just as important as that of the science-theme; and the art of the curator in both cases is the art of the story-teller. Each specimen in the art gallery is a paragraph in the story, a clue to the standard of culture of a race, a nation or an individual.

You will see that we are now getting down to the heart of the problem. The story told by the curator has always a geographical background. I might with equal truth have said that there are always, or nearly always, two backgrounds, the geographical and the historical; but I am addressing the Geographical Association and not the Royal Historical Society, so I propose to concentrate on the geographical aspects of museum display. What help can the geographer give to the museum curator? And how will the work of the curator, and the value of his services to the general public and to schools, be enhanced if he seeks the geographer's help? That is our main question, to which I wish to suggest one or two answers.

Let me take first the simplest answer of all. It is quite obvious that the value of a collection of zoological or botanical or geological specimens is greatly enhanced if it is supported by a map indicating the distribution of the specimens. Their distribution may be world-wide or regional. Their occurrence is determined by conditions of climate, soil, water, etc., or by movements of rivers or of the earth's crust in the case of minerals. The correlation of animal, plant or mineral with region is an important factor in the story, whether the region be large or small.

But the value of the historical or archæological story also may be enhanced by a judicious use of the accompanying map. The Romans in Britain had a great faith in town-life, and linked their towns by means of strategic roads; and Roman remains in this country, whether

of buildings, coins or pottery, usually support this principle—a principle simply and clearly illustrated by means of a map. So also Saxon or Viking remains, and their locations, illustrate other life-principles which are best established geographically, by maps.

When we pass from natural history or botany or archæology to economics, the same principle applies. The Leicester Museum circulates to its schools a pamphlet which links (in an illustration) a map of India with the chief products of India, and shows on the map where they occur. So also a recent issue of *Museum* (Vol. II, No. 2) illustrates the use of maps in galleries of the Brooklyn Museum, New York, and of the Academy of Fine Arts, Honolulu. I do not need to labour this point further. Wall-maps are used with effect in many British museums, to illustrate the main theme under display.

It is when we turn from wall-maps to relief-model-maps that our difficulties begin. At the Imperial Institute we make very wide use of such models—indeed in our four main galleries there is practically no Empire Court which has not its own relief-model-map. Even Tristan da Cunha is represented by a map of this kind (with a few accompanying exhibits) and the volcanic character of the island is clearly demonstrated. The relief-model has this supreme advantage over the wall-map, that it gives directly and tangibly the dimensions which the wall-map can only give by implication. I am not one of those who believe that education should be made too easy. I believe that map-reading is an essential part of education and that the eye can easily be trained to visualise a mountain-range from well-chosen layer colouring on a wall-map. But the stories which we museum-enthusiasts wish to get across are the main thing. They must be simply told. They are an essential stage in acquiring the art of citizenship. We cannot possibly afford to tell these stories in a form which is only intelligible to the trained map-reader. It is mainly for this reason that I press the superiority, for some purposes, of the relief-model over the wall-map.

But in general we are not at all satisfied with our present policy at the Imperial Institute in regard to these relief-models and our Education Committee is considering whether we could not make better use of them. The most obvious defect lies in the fact that we cannot adopt a single horizontal scale for all relief-models throughout our Galleries, for the larger the territory involved the smaller the scale to be used, if the map is to be kept down to a reasonable size; and the smaller the territory shown, the larger the scale and consequently the closer the approximation to reality and the better the use of available space. Again, on very small-scale models the vertical scale must be exaggerated if the natural features are to appear at all. Imposing mountain-ranges, which must adopt the low horizontal scale for their bases and the high vertical scale for their summits, can only logically appear as a series of sugar cones—not at all the result which we have in view. Our relief-models of Gibraltar, Malta, Cyprus, Mauritius and Tristan da Cunha are admirable, whilst those of Australia, Canada and India fall far short of the ideal. The larger the territory the wider is

the difference between the horizontal and vertical scales, and the greater is the distortion.

Nevertheless these are unavoidable handicaps, as far as we can see, imposed on us both by nature and by man ; and when these two agree upon anything, the mere museum curator must humbly accept the inevitable. All he can do is to make the best of his job within the limitations imposed upon him. I turn, therefore, from our experience in the Exhibition Galleries of the Imperial Institute to draw some conclusions of a general character on the subject of relief-model-maps.

The first conclusion is obvious, and is indeed implicit in the previous paragraphs. It is the museum which concentrates on a comparatively manageable area which is free to use the relief-model method with the closest approximation to natural geographical configuration—that is, with the greatest accuracy and success. I cannot give a complete list of such museums, but I can testify from personal knowledge that the National Museum of Wales and the Bristol and Leicester Museums do make good use of relief-models ; I commend, particularly, the use of such models in the geological section of the National Museum of Wales. And I venture to add that the relief-model could be more widely used than it is, in provincial museums, to illustrate such stories as those of prehistorical and historical sites—not only where, but why, these sites were selected ; the general run of woodland, scrub, moorland, fens, crops, gardens and orchards ; the distribution of local fauna and flora ; the occurrence of minerals ; and so on.

This brings me to my second conclusion, which I suggest with a little more diffidence. If the relief-model is most accurate (and therefore best) in covering comparatively small areas, yet there are some lessons to be drawn from large geographical areas which the model can still expound more effectively than the two-dimensional map. In other words I claim that for some purposes the inevitable distortion arising from the attempt to reconcile a small horizontal scale with a larger vertical scale is not sufficiently important to put the relief-model out of commission in illustrating large territories. Our chief difficulty is, of course, that of mountain-ranges. These, for obvious reasons already given, are inaccurate. But for some purposes accuracy is not essential. The existence and location of the mountains is the main thing. Their range and height are important, but not (for general purposes) the details of their configuration. They may for these purposes be treated as vertical land-masses whose details need not be precise.

Let me explain in a little more detail. Mountains carry out four main geographical functions. They are usually regions of heavy rainfall. They may thus be the source of rivers. They may yield the material from which fertile plains were not only originally built up but are also perennially renewed. If they are snow-capped they may, in addition, serve as the source of perennial rivers. It is from these four physical phenomena that the main characteristics of the economic

life of a community depend, from forests, crops and pasturage to woodlands and fisheries. In temperate climates, it is true, civilization—or, if you prefer it, over-civilization—has rendered local communities less and less dependent on nearby soils for their food, more and more dependent on food-supplies from abroad. Nevertheless, no nation can neglect its soil and thrive; and if local woods, crops and pasturages do not necessarily maintain the life of a provincial community directly, it is because the products are exchanged for products outside the province. The national story is still there to be told, illustrated by the natural economic assets of the province. If any of my audience are interested I recommend them to visit the Australian Court in the South Gallery of the Imperial Institute, to see for themselves our latest technique in the use of relief-model-maps as illustrated by the map of Australia, with its accessories, tiny models of cattle and sheep to illustrate the pasturages.

This leads to my third conclusion, that the relief-model, though admirably adapted to reveal the physical characteristics and capabilities of a country or district, cannot possibly tell the whole story unaided. The wise curator will always use a wall-map to illustrate other features for which the actual physical configuration of mountains, valleys and plains is irrelevant or less relevant. Transport, for example, by air, railways and roads, is better shown by wall-map than by relief-model; as are also provincial and national boundaries, cities, towns, ports and villages. If one may venture a broad generalisation, the model lends itself best to the illustration of the natural physical characteristics of an area, whilst the wall-map is useful to illustrate modern man's refinements on nature.

May I now draw upon our experience and experiments at the Imperial Institute to suggest to my audience one or two hints by way of supplementary aids to museum technique? They cannot all be applied in the schools but they can, if approved, be passed on to the curator of the local museum with whom the geography teacher is in touch. Natural scenery is important as an aid to knowledge of the country, as architecture is to knowledge of a town. Take an Ordnance Survey map, plot upon it a journey which takes in the principal beauty-spots and architectural features. Number each view or site on the map and place photographs with corresponding numbers around the map. And, of course, the same thing may be done with any Commonwealth or foreign country—the map, with numbered routes and numbered photographs to support. We call these illustrated maps "Travellogues" in our Exhibition Galleries at the Imperial Institute. For ordinary British purposes nothing could be better than the Ordnance Survey maps, whose virtues and value were most justly extolled by James Fisher in an article published in the "Observer" of the 11th September, last.

Again we are experimenting with relief-model-maps, to illustrate forests, crops, pasturage, mines, etc., by means of a few miniature figures of cattle, sheaves of corn, trees, pit-head derricks and so on,

placed in the right positions on the map. We have had great success with a large table-map of the Colonial Empire, with a press-button system to light up each individual Colony and its products—so successful, indeed, that school-children played upon it as on a piano during the war and completely ruined the connections! It is to be repaired on a system which allows only one Colony to light up at a time. A similar press-button map has recently been installed in our Canadian Court by the generosity of the Canadian Government to illustrate the principal industries of Canada. It gets its story across with great clearness and effect.

Yet again, we are trying to develop an idea which originated from Mr. S. F. Markham, a Past-President of the Museums Association, and which he explained to me in the course of a conversation I recently had with him. Mr. Markham suggested to me that if only we could think out a material sufficiently thin, strong and light, we could have successive layers or skins which could be made to fit exactly over a relief-model-map. The model itself could be coloured to illustrate underlying geological formations. One layer would be superimposed to indicate the surface-soil. A second top layer would cover that to indicate forest areas, pasturages, crops, running or still water and so on. By this means the visitor could see at a glance the use which man makes (or does not make) of surface soil; then the grades of soil revealed by soil analyses; and finally the basic geological formation. Indeed, any number of layers might be used for various geological purposes. The top layers would be hinged and thus easily raised to show the layers underneath. It seems to me that this would be a most valuable addition to museum technique. Possibly it may be found that plastic would be the right material to employ in manufacturing the top layers, detachable, yet moulded to fit exactly over the relief model, which might be of ordinary plaster.

Hitherto I have concentrated on the map as a necessary adjunct to the geographical element in museum technique. But, of course, there are other visual aids also. For example, human geography has an important role to play in modern education. How do they live, these friends of ours in the Commonwealth overseas? How do they dress, and eat, and drink, and what do their schools and school-children look like? Here the window-transparency is a help, or the smaller colour-transparency which may be lighted up or switched off by the visitor. The optiscope, the stereoscopic views—all these are useful to illustrate the human story. But one point is essential. The human being should never be posed, but always active, always employed. That is an essential aspect of the human story.

Again, the diorama can often be used as a geographical aid. We regard diorama technique as an important method of display at the Imperial Institute, and we are experimenting with new forms. The great Kodarma mica-field in India is illustrated by a diorama covering many square miles of Bihar country-side, with the adit to a mica-mine in the middle distance and a factory in the foreground showing the

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women-workers splitting the mica into thin "blocks." This is essentially human geography; and the story is reinforced by an inset model of the window of a domestic stove, with flames leaping realistically inside the mica panes to the window.

One diorama, of a plumbago mine in Ceylon, shows the factory above ground, in which the plumbago is processed, sorted and packed, with a view also of the below-ground workings where the mineral is mined and carried up by a hoist in tubs to the factory. For both views the same scale is adopted; and indeed they form one picture. A still more recent type of diorama combines an aerial view of a broad expanse of territory in Northern Rhodesia in which appear the shaft-heads, factory-buildings and worker's dwellings, of a copper mine. Below, and quite separate, is a close-up view of the underground seams with the native workers carrying out the drilling and other mining operations. It is a novelty, in that the scales employed for the above-ground scene and the under-ground workings are, of course, quite different. The intention is to produce, in diorama form, the same effect as a scenic photograph with a close-up of some particular section, or activity, inset. Human geography again, or economic geography, whichever you may choose to call it. The former term emphasizes the story of human activity, whilst the latter term emphasizes both the motive inspiring the activity and the practical results.

The working or moving model is not usually associated with geographical exhibits, but there is no reason why it should not be more extensively used than it is at present, the object being to give an effect more true to life than the static model. Those of my audience who are professionally connected with museums will recall a passage in the Markham and Hargreaves report on the museums of India which describes, with an accompanying illustration, a working model in the museum of the Forestry Research Institute at Dehra Dun. This model represents in one scene both a forest-covered hill-slope and also a part of the same hill entirely denuded of forest. Water is pumped up from a reservoir underneath to fall heavily on the model as monsoon rain. The forest area is constructed of spongy material which allows the "rain" to soak quietly back into the reservoir. The denuded area shows the rain sluicing down the hill-side. Both streams, of course, meet in the reservoir and are pumped up again to maintain a steady monsoon downpour! We are considering the construction of a similar model at the Imperial Institute where, at present, the story of erosion is less graphically told. Other moving models are on view at the Institute and I am sure all museum curators will agree with me that this is an appropriate and instructive form of display.

We have now brought under review some of the "aids" which the geographer can give to the museum curator, from maps in general and relief-model maps in particular to transparencies, dioramas and moving models. What conclusions may we draw from this survey? A few obvious ones. First, that we are all, in our varied natural intellectual and emotional make-up, compound of both the scientist and

the artist. Some of us naturally incline more towards science than towards art, or vice-versa ; but we are never able, and should never desire, wholly to escape from the duality—always remembering the two-fold debt of the man-in-the-street to the scientist, who discerns, assesses and reveals the Power which lies in and behind the universe, and to the artist who discerns, enjoys and reveals the beauty of created things. Secondly, that geography is both a science and an art. With meteorology and climatology and astronomy, it is essential to an understanding of nature and of the operation of the natural sciences, just as a knowledge of history is essential to a proper understanding of human nature. Indeed geography establishes the background against which man himself evolves and therefore the background against which unfolds the whole pageant of human history. Thirdly, that the geographer, the school-teacher and the museum curator are a very powerful trio, with great potentialities for good in their influence on the rising generation ; and the closer they can work together, the better for all concerned. Fourthly, that our lives consist largely of social relationships. We are each members of a family, a society, a nation, a commonwealth and of humanity as a whole ; and the wonderful and vital feature of our make-up is that we are able, without undue strain, to maintain all or any of these relationships at any given moment of our lives.

So far so good—and indeed obvious. My next conclusion is a little less obvious, but I hope you will accept it as nevertheless important and even inspiring. In our approach to geography, whether as teachers or as men and women of the world, let us never forget that the microcosm is only a small reflection of the great system of which it is a part. The microscope is no less important than the telescope, but no more important. The relationships of family and of society may be sufficient in themselves, but only on a short-term view ; long-term, they point to the race and to humanity at large.

Let us not, therefore, be content with the social survey as an adequate substitute for geography. It is a useful approach, but only an approach, to that knowledge of the globe on which previous generations rightly laid such stress. It is true that all possible social surveys, completed on one system and amalgamated, would provide a total world-picture ; but in that picture the trees would tend to assume too high a value relatively to the wood. The social survey of a district is a good training exercise, but only as a means to a knowledge of the greater world in which we live—in other words, to world-citizenship.

This leads to my final conclusion, in which the last word remains with the museum. If the integration of human personality means anything—and the psychologists assure us that it does—then surely the integration of educational methods is a most desirable step towards the building up of integrated personalities. As matters stand at present, the national museums occupy positions of great importance in the national life ; then, perhaps, the museums of the great civic

centres ; then the county and local museums ; and we should not leave out of account the school museum, more or less at the bottom of the scale. What a revolution it would be if we could only get these values reconsidered. The school would then become one of the principal consumers of museum technique. If the integration were carried out effectually throughout the scale there would be frequent interchanges, by loan or free gift, of exhibits as between all museums, national, civic, provincial and school.

How greatly the school museum would benefit. Geography would maintain an honoured place in the museum, for geographer, school-teacher and museum-curator would be co-operating closely in the interests of the school. I pay equal tribute to Mr. Leonard Brooks and to Dr. Garnett for this suggestion. The latter writes :—"The Geographical Association has some fifty local branches scattered over the country, as also have the Historical Association and other specialist societies ; and in addition to these there are countless local scientific societies of diverse interests, all of whose local researches should be correlated and integrated. And where better may this work be carried out than in the local museum functioning as the cultural focus in the small market town, or larger regional capital, with the geography teacher, because of his all-round view of the world, a pioneer and leader in this work ? A full assessment of the geographical personality of the regions of Great Britain has yet to be made. May we not hope for the completion of some studies of each region, through the active co-operation of the local branches of the Geographical Association with such museum facilities, in the towns and in the schools, as may already exist or may even be created by their inspiration ? " It is on this inspiring note that I will conclude my address.

SETTLEMENT IN SUSSEX, 1840—1940*

W. H. PARKER

IN 1840 the first railway train in Sussex ran between Brighton and Shoreham ; 1940 was the last year in which motor cars ran freely about the roads of the county without restriction of movement or rationing of petrol. This hundred years of rapid and unrestrained transport development also witnessed changes in the distribution of population. It is the purpose of this paper to study the relation between the development of transport and the changes in population.

The study of settlement in Sussex since the end of the 18th century, moreover, is especially interesting because in no other county has the settlement pattern been determined so much by choice and so little

* Paper read to Section E of the British Association for the Advancement of Science at Brighton in 1948.

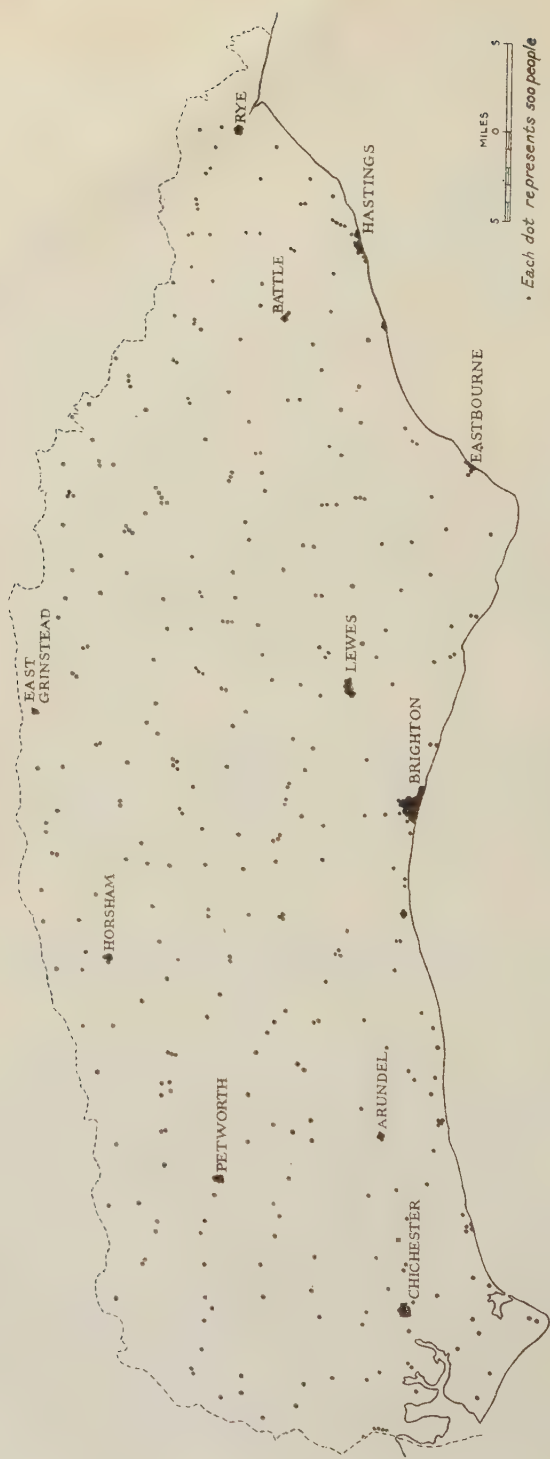


Fig. 1(a) SUSSEX. POPULATION DISTRIBUTION 1841



Fig. 1(b) SUSSEX. POPULATION DISTRIBUTION AND RAILWAYS 1921

by economic necessity. Most of the inhabitants are people who have chosen to live where they do and those who minister to their wants. Even so, population movements in Sussex have been related to the economy of the whole country. The first half of the 19th century saw much amassing of wealth and it became fashionable for newly enriched families to settle in Sussex and for a growing leisured class to seek diversion on its coast. Further, the move from open country life to the dark factory and stuffy office had created the need for the periodic holiday of sun, sea and air. The great increase in the numbers of residents in, and of visitors to Sussex was a phase of the industrial and commercial expansion of the Victorian age.

The railway system of Sussex was complete by 1887. The motor car was first seen in Sussex in 1895 and motor buses began to operate ten years later; but the railway remained the dominant form of transport until after the 1914-18 war. Neither motor cars nor motor buses became general until the 1920's. The 1930's saw the electrification of much of the railway system, beginning with the London-Brighton line in 1932.

In 1841 there were 300,000 people in Sussex, two-thirds of them in towns of which Brighton (60,000) was the largest (Fig. 1a). Although a busy fashionable town, it had almost ceased to grow, checked by the limitations of road transport by coach. Of the other coastal towns, Hastings, ancient port and new resort, came next (10,000). The sea-side parishes containing Bognor, Worthing, Seaford, Eastbourne and Bexhill, had also felt the effects of the "rush to the coast," but these other resorts were small, stagnant, and seasonal; they were served by the bad old Sussex roads and were often inaccessible in winter.

The earlier pre-eminence of the Sussex ports was gone. Rye (4,000) was still the largest, but Shoreham at the Adur mouth had grown of late as the port of Brighton. Littlehampton at the Arun mouth was a small place, and Newhaven at the Ouse mouth a mere village. Brighton and the coastal resorts and ports had virtually ceased to grow by 1841, but population was increasing almost everywhere in the rural parishes inland. The old boroughs of Lewes and Chichester, each with about 10,000 inhabitants, were considerable places. There were, besides, the smaller market-towns of Arundel, Petworth, Horsham and East Grinstead.

The period of railway predominance was marked by the growth of towns on the coast (Fig. 1b). Brighton spread into Hove and Preston and became a very large town; Hastings (which absorbed St. Leonards) and Eastbourne became large towns; Worthing, Bexhill and Bognor became small towns. With the exception of Rye, where the railway ran past the port to the coast at Rye harbour, furthering its decline, the ports also grew into small towns. The first line in Sussex linked Brighton with Shoreham which, by supplying building materials and coal in increasing quantities, shared its prosperity. Newhaven (population 955 in 1841, 6,772 in 1921) owed its growth solely to the railway which made it a passenger port for France in 1847. The

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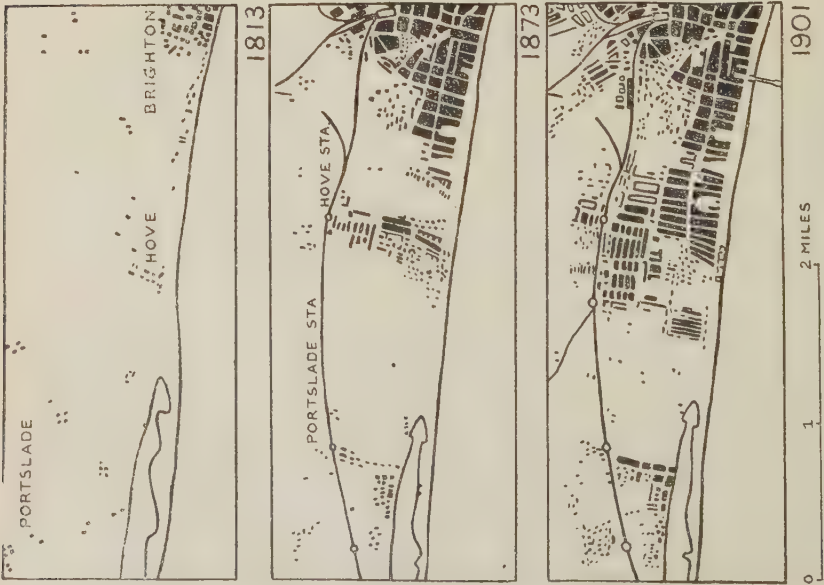
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railway enabled Littlehampton to expand its timber-importing trade by supplying the fast-growing resorts along the coast.

Despite the growth of these coastal towns, there was little or no development of the coast as such; the population of the *non-urban* coastal parishes actually fell from 21,000 to 19,000 between 1841 and 1901, whereas the coastal towns increased from 80,000 to 328,000. As a result, ugliness and disfigurement were limited to a few focal points. Whole lengths of coastline remained in a natural state. The absence of a bus-service meant that workers could not live at more than walking distance from their work; and as so much of the labour in these new coast towns was personal and domestic, the concentrating effect was intensified. Slums resulted and Brighton became notorious for some of the worst in England; they developed at Hastings and Eastbourne, though on a smaller scale, and even at Hove. Population was drawn away from the parishes around the new towns, and this was complementary to the rail-station-caused concentration within them. The census commissioners ascribe a decrease at Edburton in 1851 to "many young persons having left to go into service at Brighton"; other decreases are due "to the removal of labourers to Eastbourne." In the motor-transport period many of these young persons and labourers would have lived at home and gone into Brighton or Eastbourne by bus.

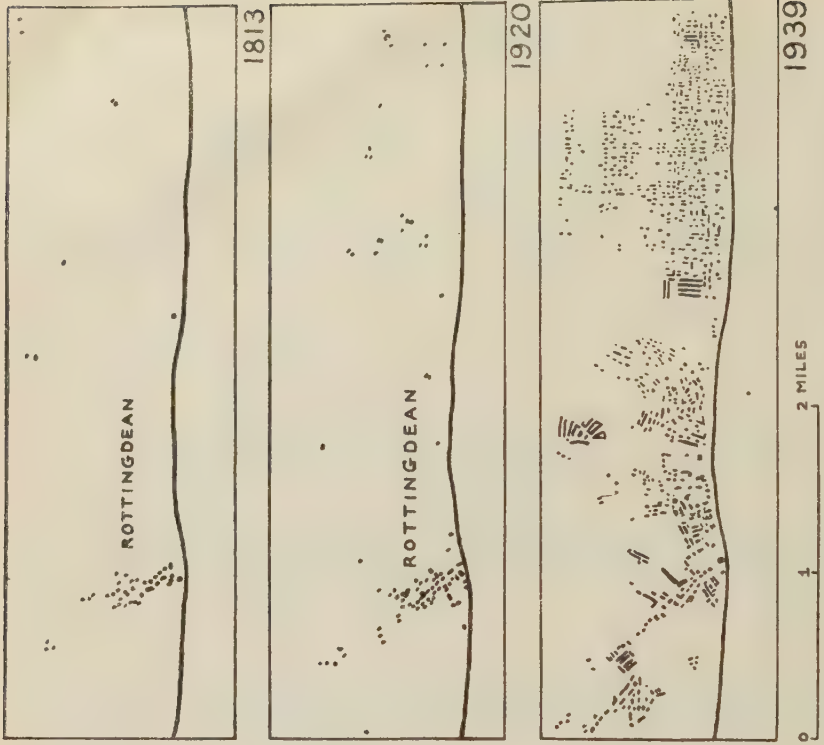
In the railway period a town did not, in modern fashion, grow uncontrolledly outwards. As people could not live too far from a station, which became increasingly the source of most of the necessities and luxuries of life as well as the inevitable point of departure and arrival for all journeys, a new settlement grew up round the next station along the line. This happened at Hove and Preston, stations respectively west and north of Brighton; at Ore and St. Leonards, next to Hastings; at Hampden Park, next to Eastbourne. Finally, the spreading original town and the growing new station settlement would meet, resulting in a continuous built-up area. West of Brighton there have been further stages, Hove similarly growing into Portslade parish and being met by an independent growth from Portslade station, and so on along the line (Fig. 2a). Development is in circles of growing radius centred upon railway stations; the mainline stations with the best services throw out the largest circles. The largest town is achieved not by a steady growth from one centre but by overlapping the expansions from several.

The coming of the railway removed the means of livelihood from increasing numbers of the inhabitants of inland Sussex. The market-towns became distributors of rail-brought imported foodstuffs instead of markets for local produce. By bringing the cheap factory-made goods of the north and midlands, the railway destroyed rural industry. In 1861 the census report attributes a decrease at Alfriston to "the discontinuance of brewing, tanning and glovemaking." Unemployment and depopulation ensued. Of the 235 inland parishes of Sussex, 138 decreased in population in the second half of the 19th century; in



THE WESTWARD EXPANSION
OF BRIGHTON

Fig. 2(a)



DEVELOPMENT EAST OF BRIGHTON

Fig. 2(b)

the first half the number had been 14. The railway stimulated pasture in place of arable, especially on the cold clay lands; dairying began to thrive where milk could be got to a station. Some measure of depopulation was nevertheless the result. The dry chalk uplands could not even make this substitution and there the decline in population was steepest.

There was considerable depopulation and migration into the coastal towns. Yet the aggregate population of inland Sussex increased by 62,000 between 1851 and 1921. This was not natural increase, but resulted from an influx of people who, wishing to live in Sussex, settled in villas within reach of railway stations. The number of places affected was relatively few; the villas were built either around old-established settlements or where a railway station was opened in attractive country. Four thousand people settled round Crowborough Beacon in the 30 years after it became accessible by rail.

Places without rail communication lost agricultural population; those with the railway gained villa residents. Over the period 1851-1921, parishes without stations suffered an average decrease of 15 persons; parishes with stations increased on an average by 919. These figures relate to inland Sussex only.

In the railway period the precise siting of a station was important. As a rule, the hilly downland and forest ridge villages benefited least from the arrival of the railway because of the climb from the distant station in the valley up to the village. Only 15 of the inland parishes with stations declined in population between 1851 and 1921: of these 9 were forest ridge and 4 downland parishes. Sometimes a new settlement of brick buildings grew up round the station in the valley, contrasting with the old sandstone village on the ridge, as at Heathfield (Fig. 3).

The most emphatic illustration of the effect of station-siting was provided by the London-Brighton line. The policy of the company was to place a station where the line ran between two villages, to serve them both: Three Bridges between Crawley and Worth, Haywards Heath between Cuckfield and Lindfield, Hassocks between Hurst and Keymer. There was also a station at Burgess Hill to serve a roadless clay country of scattered hamlets. These stations became the centres of entirely new towns. The increase in Cuckfield parish in 1871 is ascribed to "the erection of a large number of buildings around Haywards Heath which, being easily accessible from Brighton, is selected as a place of residence by many persons engaged there in business."

In the rail period people living close to Haywards Heath station were nearer in time to the centre of Brighton than those living on the outskirts of that town: Hassocks, Burgess Hill and Haywards Heath were all part of the rail-station controlled expansion of Brighton (Fig. 4).

Of the market towns and boroughs only one, Petworth, had fewer inhabitants in 1921 than in 1841: but Petworth is also the only one



SETTLEMENT AT HEATHFIELD STATION

Fig. 3

without a station; the station bearing its name is over two miles from the town. Two ancient and famous boroughs, Arundel and Lewes, made very little progress during the railway period and were in decline towards the end of it. They are both bridge and gap towns and both lost their waterway trade; both suffered from the ruinous collapse of the sheep and arable economy of the downland; neither could become a centre of villa settlement because the steep slopes of the chalk hills hemmed them in; a residence on the outskirts of one of these towns would mean a steep ascent from town and station. Chichester also declined in the 19th century, for not dissimilar reasons.

Of the old market-towns, Horsham and East Grinstead alone made striking progress. But it was not as market towns that they grew; they became centres of villa development. The 1861 census attributed Horsham's increase to "the facilities of railway communication. Villa residences have been erected and continue to be in great demand." On the Weald Clay vales smaller towns, which had been prevented by the wretched roads from becoming useful centres, were enabled by the railway to become markets rivalling the older towns and, at the same time, to attract some villa settlers: Hailsham and Uckfield provide the best examples.

To sum up, the influence of the railway on residential settlement was exerted through the station, nearness to which became an asset. The towns became concentrated settlements close-built round the station. In the countryside it was the station itself, rather than the village it was intended to serve, that became the focus. The bad roads of Sussex, the worst in the kingdom, enhanced the value of proximity to rail.

The influence of the road is not limited to any one point but is continuous along its course. Further, almost every settlement is of necessity on a road and, although some roads are better than others, no place is now at so great a disadvantage as was the settlement without a station. Physical controls over settlement are greatly lessened. Except for the London-Brighton line, carried with reckless finance through and across all obstacles, the disposition of the railways

was governed by physical geography. The modern motor car has no such respect for gradients.

The motor car, aided by the telephone, has reversed the concentrating effect of the railway, substituting dispersal. It came at a time when, because of the agricultural depression, land was very cheap. This encouraged those freed from rail-station control to set their houses amid extensive grounds; even small villas having gardens large enough to hold a dozen houses of the old type. Hence the sprawl of few people over much land. If there are new towns they are not like the old. The Land Utilisation Survey gives to "new housing areas" the purple colour of gardens; the old towns have red centres with purple surrounds; the new towns are all purple. The town, in the sense that the word was used for centuries, is obsolete.

In one respect, however, the railway station still operates powerfully as an influence: namely, wherever electrification has made trains fast and frequent enough to enable people to work in London and sleep in Sussex. The county is distant enough from the metropolis for this not to be easily feasible by car, but close enough for it to be possible by electrified rail.

Between the two wars the influence of motor-transport became rapidly supreme and the consequent changes in population distribution were striking. The empty coastlands between the resorts and ports were soon filled. Villas and bungalows placed in large gardens crept over the coastal plain from Selsey to Shoreham. Even the cliff-top east of Brighton, hitherto immune through the absence of the railway, became overspread (Fig. 2b). From Eastbourne to Kent drained marsh and sandstone cliff alike fell victim, and a whole town sprang up at Camber on the shore of Walland marsh. Only the high cliffs between Eastbourne and Seaford were too formidable for this new encroachment. This development, although well under way by 1931, mostly belongs to the 1930's and was still in full progress when war came in 1939.

The natural coast all but disappeared. So did the urban slums; but instead of acres of town slum there were square miles of rural and coastal sprawl. By 1939 large areas in the centre of Brighton were cleared and empty; no one knew quite what to do with them; it is significant that they were eventually used as car-parks. In the centres of all the towns, Worthing as well as Eastbourne and Hastings, the sign "To Let" was distressingly familiar. The town-house was at too great a disadvantage: rates were high, garages few, gardens small. The towns, choked with traffic, tended to be avoided by those who could live where they pleased. They mostly decreased in population in this period; those which, like Hove and Worthing, made impressive increases, did so by annexing adjoining parishes. In Brighton, Eastbourne and Hastings there was redistribution but not growth.

The contrast between the westward and the eastward development of Brighton, as shown by Fig. 2b, is informative. Along the coastal

plain to the west was the railway; settlements grew up round the stations and expanded until, by 1920, an almost unbroken built-up area extended to Shoreham and the Adur mouth. To the east, where the undulating chalk plateau and cliffed coast had forbidden the railway, there was little more settlement in 1920 than there had been a century before; but the coming of the motor-vehicle transformed this empty land.

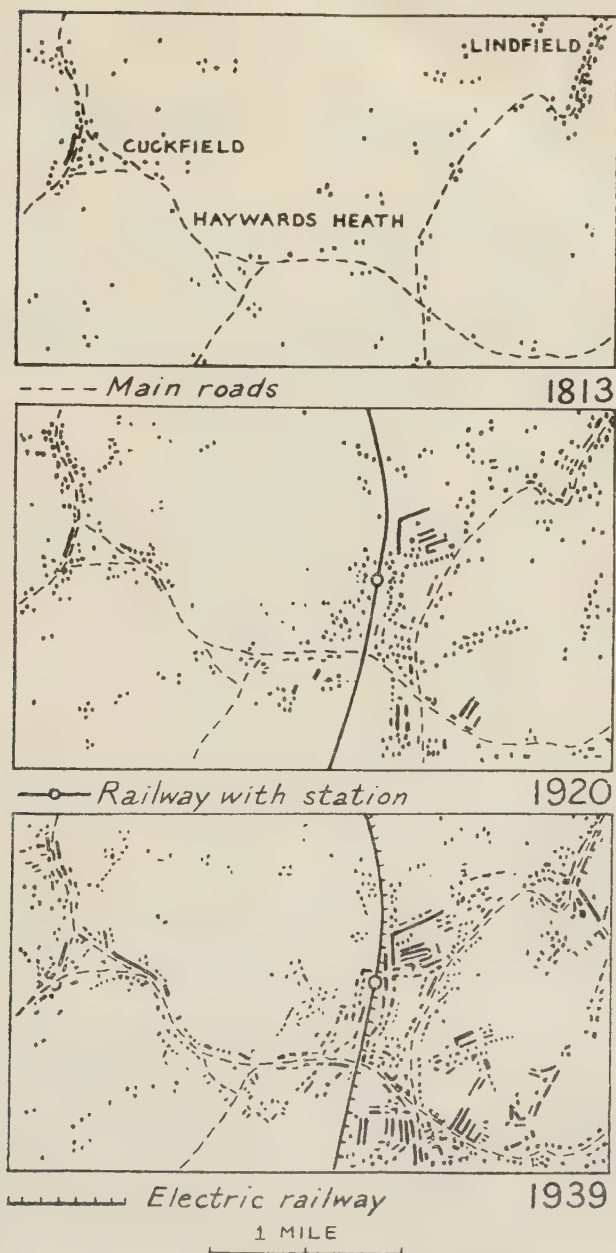
Worthing, freed from the coastal railway's control, hastened inland along the main road to Findon and sprawled up the downland slopes towards Cissbury. The beauty of this hill-shrine, inevitably preserved by the railway, was now destroyed in the same manner as the natural coast.

Turning now to inland Sussex, comparison between the census figures for 1921 and 1931 shows the non-railway parish no longer at so great a disadvantage. Parishes with stations increase on an average 113, those without, 77. Parishes served by motor-bus have an average increase of 66; those without a bus-service an average decrease of 5. The average increase of a parish with an A-class road is 143; without such a road, 21.

The motor car and motor bus freed settlement from the necessity of being near station and town. Empty commons, away from any station but served by roads, were enclosed and developed as building estates. The very decline of some places becomes now, in itself, a cause of revival and growth. A downland or scarpland village decays in the 19th century and its unwanted labourers go off to the town; in the 20th century this same village is admired as unspoilt, for there are no new brick buildings to jar with the rest; indeed, there are empty cottages capable of renovation and furnishing with appropriate antiques; motor-transport and the telephone enable one to live in such a place; the old village fills up again. There may be a further stage: people attracted by the old-world charm, there being no more empty cottages, get a builder to put up villas for them, in or out of keeping with the rest. This process was in full swing along the foot of the downland scarp in 1939.

Ridge-top sites, handicaps in the railway age, became ideal when the motor car and motor bus restored the old ridge roads to their former importance. The villages had remained neglected and "unspoilt" during the railway era and their natural surroundings appealed to the prospective villa-dweller. Since the 1914-1918 war they have nearly all developed ribbon-wise extensively along the ridge-top roads.

The electrification of the London-Brighton line in 1932 has made the influence of the railway at places on it still the dominant one; they are now dormitories for London rather than for Brighton. Haywards Heath is 44 minutes from London by fast train and the service is very frequent. The motor is not without influence here. It enables Haywards Heath, although still principally a rail-station settlement, to sprawl over the countryside in the manner of other



SETTLEMENT AT HAYWARDS HEATH STATION

Fig. 4

modern settlements. Thus we have three stages. In the pre-railway era there are two villages, Cuckfield and Lindfield, 3 miles apart. A station is placed between them on the waste land known as Haywards Heath and a new town grows up there. Thirdly, by ribbon-development along the roads joining the three, one straggling settlement results. There has been similar evolution at Crawley-Three Bridges-Worth and Hurst-Hassocks-Keymer.

Of the ancient boroughs and market towns, Arundel and Petworth continued to decline and Lewes to stagnate, in the motor-car period. Horsham and Chichester, however, found themselves principal road centres and the electric rail came to both in the 1930's, giving them frequent fast trains to London. By 1939 Horsham was becoming mainly a London dormitory with new villas spreading out fast to the north and west. East Grinstead has become also in some measure a dormitory town.

Two different forms of transport have resulted in two different types of population distribution, the former obsolescent, the latter of doubtful permanence. Dwindling oil supplies, an impaired national economy and dearer agricultural land may never again allow of private motor-transport and wide-spaced settlement on the extensive scale of the 1930's. The early future may render all present transport utterly obsolete.

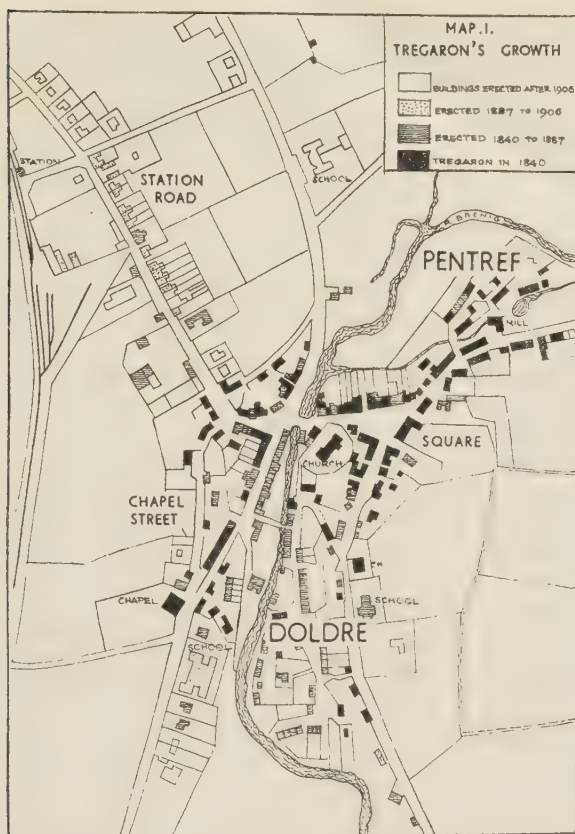
Although the future of transport is unknown, that of settlement has largely been preconceived by the planners. There is to be a new town in Sussex at Crawley-Three Bridges. This is an interesting site, for at present there is a twin town consisting of a main road settlement at Crawley and a main railway line settlement at Three Bridges. If the development of this site as one coherent town goes hand-in-hand with the co-ordination of road and rail transport, its choice may be a significant one.

TREGARON, A WELSH MARKET TOWN

EMRYS JONES

THIS paper is intended to be a brief study of the morphology and functions of a small market town. Some elements are stressed which may be new because they arise in a settlement which is essentially Welsh, and their development can be explained only in terms of their Welsh origin. By "essentially Welsh" I mean a settlement which was practically free from direct English influence until the beginning of the last century, and whose bases differed radically from both the English village and the Norman bastide town. There never was in Wales a development of the compact village outside the region of Norman influence, nor any sort of urban tradition¹. The isolated

¹ E. A. Lewis. "Medieval Boroughs of Snowdonia." "The native economy scarcely required real urban centres" (p. 5).



church and farms, and tiny hamlets were the distinctive features of the Welsh settlement pattern. The problem of describing and classifying here must of necessity be new because morphological parallels break down in terms of English nomenclature, but the approach can be similar if that approach is functional. This will be discussed more fully later, after some light has been thrown on the morphology of one Welsh market town in terms of its origin and functions.

Tregaron, which is in central Cardiganshire, about twenty miles from Aberystwyth, is a small town of just over 600 people. It lies on the river Brenig just above its confluence with the Teifi, where the coastal plateau which is a distinctive feature of Cardiganshire rises suddenly to the Plynlymmon plateau. Two routes which use the Teifi valley converge on Tregaron, and crossing these at the same point is a western road from the coast and the coastal plateau, and a mountain road which penetrates the highland directly to the east of Tregaron, and which played such a significant part in the history of the town in the beginning of the last century. The natural focus of a large upland area, the town as it is to-day is largely accounted for by this nodality.

The plan of Tregaron (Fig. 1) shows that morphologically it is a small untidily built town, but even so it has well defined sections within it which constitute "neighbourhoods." The most distinctive is the close grouping of houses called the *Pentref*, which has always been a peculiar feature of the settlement; it was described in an 1850 assessment² as "the Village," which gives a good idea of its compactness. Another well-defined "neighbourhood" is *Doldre*, built on the flood plain of the river Brenig and confined by the high banks on each side which carry the main roads south. Common to *Pentref* and *Doldre* is one significant element; with the exception of a "parlour" shop in the former and a butcher's shop in the latter, there is nothing to break the uniformity of small dwelling houses in both. Shopping and administration are concentrated in the "square," and to the west of the bridge along Chapel Street. Beyond this central portion is the long and newer Station Road.

There are three hotels and two inns in the town, considerably fewer than in the last century³ but equating more reasonably with its size. The three banks are conspicuous, too, in a small town, and so is the number of shops: six general stores, some including agricultural implements, one including book-selling, two ironmongers, a café, four "parlour" shops, three butcher's shops, three outfitters, two shoe-shops, a saddler, three shoe-repairers, two smithies and three garages. On one side of the square is a Memorial Hall which serves a variety of purposes—cinema, concert hall and police court. Other administrative offices include the chambers of the Rural District Council, Food Office, Post Office, Insurance and Friendly Society offices, Solicitors' offices and two surgeries.

On the outskirts of the town are two primary schools and a grammar school. Dominating the centre by its position on a mound which Leland described as an "earthen coppe" is the parish church, with its 14th century battlemented tower; while no less dominating on the rise to the south is the chapel of the Presbyterian Church of Wales; a Methodist chapel is modest in comparison.

That is a general picture of Tregaron to-day. Its intermediacy between rural and urban is suggested in Smailes' classification of it as a sub-town⁴. Most of its elements, however, were developments of the last century, and so the origin and primary pattern of the town must be discussed in terms of its plan in the early 1800's. Fig. 2 shows the probable plan of Tregaron in 1800; it is based upon the First Edition O.S. map (the survey for which was done about 1820) and upon primary sources.

With the exception of the *Pentref*, Tregaron, even at this date, was little more than a *treflan*. The significance of the *treflan* in Welsh

² An Extent Survey of Tregaron, 1850. Vestry Book of the Parish.

³ There were 14 inns a century ago.

⁴ A. E. Smailes. "The Urban Hierarchy in England and Wales." *Geography*, Vol. 29, 1944.

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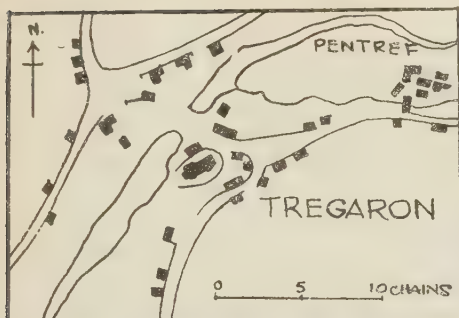


FIG. 2. TREGARON IN 1800

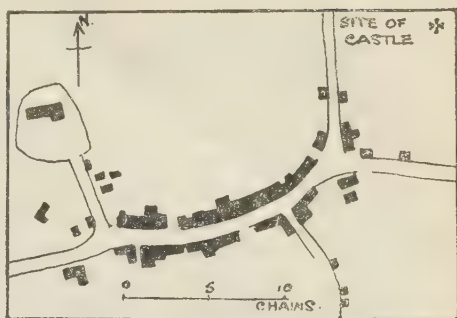


FIG. 3. LAMPETER c. 1820

settlement having been discussed elsewhere⁵, it is sufficient to note the two elements which comprise it. *Tre* is a mutated form of *tref*⁶, which under the Laws of Hywel Dda (c.950) was an area within which there was a joint responsibility for render to the king; it was a territorial unit, but it did not imply a village. It did signify a community which, though living in a scattered habitat, was held together by strong familial bonds. The second element is *llan* (lit.—an enclosure), which indicated a dedication to a saint and which can be equated with “church.” The name Tregaron has these elements—*Tre(f)-garon*, of which *garon* is a mutated form of Caron, the native saint to whom the church is dedicated.

It is true that there are more buildings in the 1800 settlement than one would expect in a *treflan*, but Tregaron's nodality was always a factor in its development, and even by 1800 the effect of the cattle trade was beginning to be felt, and was accentuating this nodality by opening up the road to the east. But in the main the pattern in 1800 is still medieval, a scattered community with a strong sense of unity centred on the church.

The Pentref in this plan of Tregaron is also a medieval feature, a small nucleated hamlet around the mill. It has been suggested that the unfree—the bond and the servant—in medieval Welsh society did not live in scattered holdings in the same way as the freemen, for their land tenure was different⁷. They lived in hamlets (*taeogdref*—bond vill), held land in community and not by right of kinship, and had no shifting homesteads. The resulting nucleated *pentref* is a recurrent feature in settlement patterns in conjunction with the *treflan*. The Pentref in Tregaron is, then, what its name implies—“at the head of the tref,” i.e., a bond appendix to the true *tref* or,

⁵ E. Jones. “Settlement Patterns in the Middle Teifi Valley.” *Geography*, Vol. 30, 1945.

⁶ *Tref* originally meant “home” as in *cartref* and *tuathref* (homeward), and its significance in the structure of society is shown in *tref-tad* (inheritance). “Such a *tref* might well be occupied by kinsmen”—J. E. Lloyd. “History of Wales,” Vol. 1, p. 298.

⁷ J. E. Lloyd. “History of Wales.” Vol. 1. “The village community is to be found . . . though only among the unfree cultivators” (p. 296). Also J. E. Lloyd. “Welsh Place Names.” *Y Cymmrodor*, Vol. XI, pp. 30–32.

the community beyond the *tref*. The mill, formerly the villeins' responsibility, remains.

This pattern reflected the medieval Welsh society which gave rise to it. Once established, its future course depended largely on its position, and this was only exploited a century and a half ago.

It is worth digressing momentarily to compare this pattern with that of Lampeter, 10 miles to the south, and the furthest point in the Teifi valley which the Normans had established securely. Lampeter (Fig. 3) was a bastide town and a burghal community, and the pattern which was preserved down to 1820 or so is typical of bastide towns. It is a nucleated settlement with one compact element, the High Street, leading to the castle. This pattern was repeated wherever the Normans built a castle and established a town, in contrast with the *treflan*; the latter was a scattered community whose bonds were those of family, the former a corporate body living in close association whose freedom and privileges were granted by the king in charters.

Although practically untouched by alien influences, Tregaron and the lands of Caron were nominally owned by Edward I, who granted the yearly fair in 1292 together with a weekly market⁸. From this time Tregaron acted as a market town. Three centuries later Leland refers to it as the "chefe town of Pennarth Lordship"⁹. The fairs and market were important in focussing—at least periodically—the life of a wide upland district. In addition to the fairs already mentioned was that associated with the patron saint, Caron; this three-day fair ranked with the largest in Wales until this century¹⁰. Later, sheep fairs were an attraction in May and June, and the fact that some sheep were bought in the 19th century to be taken to Aberdare and Gelligaer points to a range which was more than local and transitory¹¹.

But Tregaron had one advantage which was not shared by the other markets of the Teifi valley; the Abergwessyn road, leading through the Plynlymmon plateau, lay directly opposite, a determining factor in the first stage of its growth in the 19th century. This growth can be estimated by comparing Tregaron in 1840 (Fig. 1) with the earlier plan (Fig. 2). The essential pattern was preserved and stabilised, but there was an increase in the size of the town. Nucleation had increased around the church and there was considerable settlement to the west of the river. Many craftsmen who had formerly lived on small holdings in the parish, or moved from farm to farm, had now built cottages in the town, for land was becoming scarce after the first quarter century. Moreover, thanks to the cattle trade, there were a dozen inns in Tregaron by this time.

The cattle trade was an old institution¹², and Tregaron was early a collecting centre and despatching point. It was the last lowland

⁸ 1292, Charter Rolls XX Edward I.

⁹ Leland's Itinerary Through Wales 1536-9.

¹⁰ J. E. Jones. "Fairs in Cardiganshire." *Cards. Antiq. Soc. Trans.*, Vol. 17.

¹¹ D. C. Rees. "Tregaron," p. 66.

¹² P. G. Hughes. "Wales and the Drovers" 1943. Robert Richards. "Cymru'r Oesau Canol." Caroline Skeel. "The Cattle Trade Between England and Wales in the 15th to 18th Centuries." *Trans. R. Hist. Soc.*, 1926.

station and the last village before the upland trek to Abergwessyn and England. Such a journey to Abergwessyn took a day, so that a night's shelter and rest at Tregaron were necessary for man and beast. Small wonder that there were seven inns here in 1818¹³ and eleven in 1820¹⁴. There were half-a-dozen dealers living in the immediate vicinity, and as each might employ a dozen drovers, this meant a large fluctuating population for so small a town. In addition, the fairs of Ffair Rhos, Llanddewibrefi and South Cardiganshire became contributory¹⁵, for the Abergwessyn road—known soon as the Drovers' road—had the inestimable advantage of being toll-free at a period when the tolls of the turnpike roads were an added burden to travellers and cattle dealers.

The cattle trade reached its peak early in the 19th century, when dealers were sending as many as 2,000 head of cattle annually, in droves of 200, to the fairs of Barnet, Banbury, Northampton and Kent. The trade was reflected in the number of smiths, of which there were at least six in 1837¹⁶, for the cattle had to be shod for their long journey. Among Tregaron trades, smithing was second only to inn-keeping in this period.

During this first stage (1800–1840) therefore, Tregaron's function as a town was directly related to (a) the rural area it had always served as a market, and (b) the cattle trade. It was not a village in the sense of being inhabited by farmers and farm workers; it was essentially a trading community. To illustrate this it is convenient to analyse the occupations of the people returned in the census year 1831. We are only concerned with one parcel in the parish, namely Argoed and Ystrad, in which the town is situated. The total number of occupied males over 21 years of age was 161. Of these 12 were farmers and 88 were farm labourers. The farms in the parcel, which was fairly large, would absorb this labour. But it is significant that there were 61 in non-agricultural pursuits, 49 being engaged in retail trade and handicraft, two in manufacture and two in professions. These included 14 inn-keepers, three shop-keepers, a druggist, saddler, skinner, smiths, cobblers, carpenter, tailors, hatters and glover¹⁷. A number of hosiers indicates the presence of a new trade.

The map shows that growth between 1840 and 1887 was more rapid. The most significant morphological development is the Doldre, where building was begun rather earlier. Owing to its liability to floods, the *Dol*, which means flood meadow-land, had remained common land; but the canalising of the Brenig just prior to 1840 to safeguard the turnpike road released the *Dol* from flooding, and

¹³ Vestry Book of Caron, Vol. 1.

¹⁴ S. M. Powell. "The White Book of Caron" in "Tregaron" (D. C. Rees), p. 38.

¹⁵ J. Llefelys Davies. "Livestock Trade in Wales in the 19th Century." *Aberystwyth Studies*, Vol. 13, 1934.

¹⁶ Births Register of Bwlchgwynt Chapel, 1812–37, and Register of St. Caron's Church.

¹⁷ Record Books of Bwlchgwynt C.M. Chapel.

laid the common land open to settlement and squatting in a period of rising population and general land hunger. Squatting land was generally claimed by building a "clod house" between sundown and sunrise. In the *Dol* the building of a peat stack and the parcelling off of a piece of land was a sufficient claim. Sometimes knitting needles were thrust into the ground and yarn passed along them to fence in the claimed parcel. This last detail is important, for it indicates that the squatters were hosiers. Indeed, this second phase in the growth of Tregaron was concerned with manufacturing, particularly with the woollen industry and the hosiery trade.

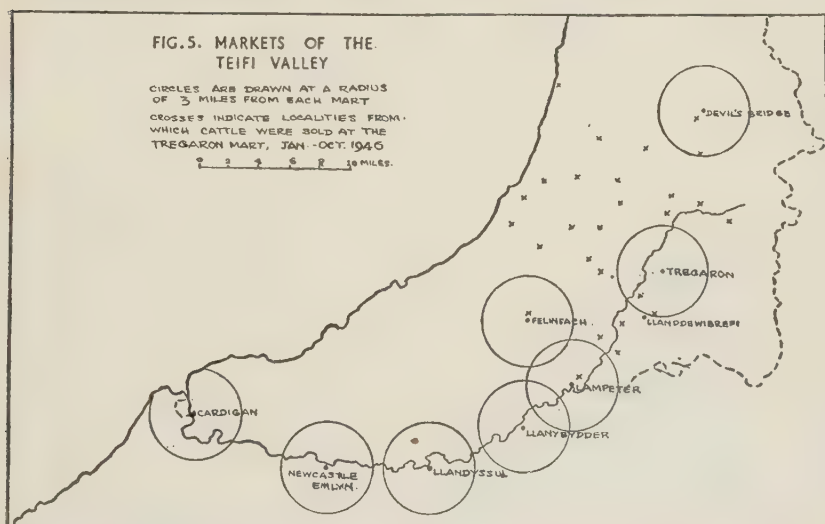
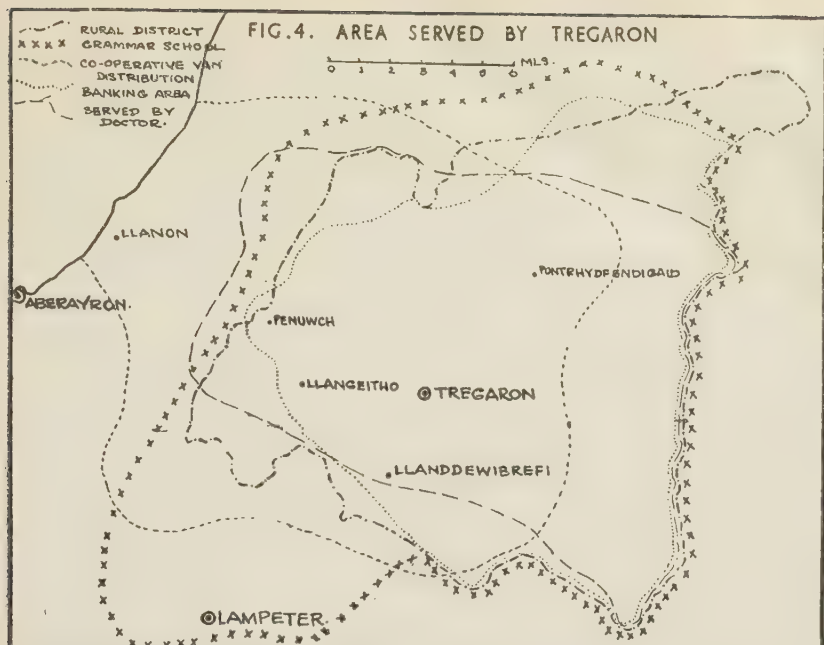
The woollen industry was old established in the parish¹⁸, but it had always been a domestic craft. This character was preserved although the hosiers and manufacturers came to the town. Practically every householder in Doldre was a weaver, and the manufacturing element soon dominated the earlier function of the town. This is shown by the occupations of the people of the district in 1851¹⁹, which include 176 hosiers, mostly women; and, closely associated with the trade, 63 tailors, 15 cloth manufacturers and 15 dealers, 17 hatters, four glovers, 36 seamstresses and six shawl-makers.

Growth between 1887 and 1906 was small but significant—Station Road links the centre of the town with the railway station. This reflects a phase of development which really began soon after the coming of the railway in 1856. Previously, the hosiery trade had flourished on a family basis, depending on the itinerant pedlar, who bought his wares at a Tregaron fair then walked to South Wales, where he found a growing market in the coalfield. After the 1880's however, the hosier usually set up a permanent wool shop in South Wales; his family in Tregaron collected hosiery and flannel and forwarded it by rail. Later in the century, with the decline in this trade, the hosier's store often became a draper's shop and, the whole family might then migrate to the coalfield.

The railway, while altering the character of the hosiery trade did not have an immediate adverse effect upon its volume. On the other hand, it transformed the cattle trade. Despite the fact that cattle were being sent to the same markets, they were not being sent via the Abergwessyn route, so the town was no longer a gathering point for drovers. Towards the end of the century the woollen trade also declined and practically ceased. The morphological development of Tregaron was almost complete. The town did not increase in size, and its function as a market—always fundamental—was the only one it retained. In the present century that function has been consolidated by the variety of retail goods, the location of administration, and the growth of cultural institutions in the town. It remains to examine

¹⁸ A 1678 entry in the Vestry Book reads: "Burialls in the Parish Church of Caron . . . the Act for Burying in woollen in the Eleventh year of the Roigne of King Char. the second." The craft may have been promoted by the fine of £5 involved in disobedience.

¹⁹ From the Occupations in the Sub-District of Tregaron in the 1851 Census Returns. There were three woollen mills there at the time.



more closely the functions of the town to-day together with its links with the wide area it serves.

Fig. 4 gives some indication of the area served by Tregaron, and it shows effective control over a well-defined region. The Rural District of Tregaron gives the approximate limits of the service area, coinciding closely with the drainage of the Upper Teifi, with an overlap into the Ayrn basin. Within this, but sometimes extending beyond it, are indicated the limits of several other services supplied by the town: marketing, banking, distribution of foods and wholesale commodities by vans, secondary education, etc., all focussing on

Tregaron. In two districts these limits coincide very closely: first along the east, where the limit is physical, the Plynlymmon plateau being a limit of settlement, and secondly, at a point to the south between Tregaron and Lampeter where the influence of the latter counteracts the influence of the former. In the west some services are shared with the coastal towns of North Cardiganshire. But the dominance of the town is quite extensive over a relatively uniform area. The extent of this territory is the measure of Tregaron's function as a market.

Fig. 5 shows that the markets of the Teifi valley are fairly evenly spaced, each serving an area within a range of about three miles²⁰. For geographical and historical reasons, however, Tregaron serves a much wider district than this. There is no market immediately north of the town, in what is mainly sheep country, nor is there a market on the coastal plateau to the west, where focal points are lacking. To the south, the market at Llanddewibrefi had long ago lapsed, and that district is now tributary to Tregaron. The map also shows those localities from which farmers brought their stock to Tregaron mart during a typical six-month period in 1946. This emphasises the wide range of the mart in the absence of nearby markets. People from this area make Tregaron their centre on market day, and the town is mainly a response to their needs.

It is in this larger context that the economy of the town must be considered. The occupational classes of Tregaron are given in this table, and are sufficient to show its function:—

| Occupational Classes: ²¹ | Men | Women | Boys under 21 | Girls under 21 | Total | % |
|--|-----|-------|---------------|----------------|-------|-------|
| I.—Higher Clerks and Professional | 20 | 5 | — | — | 25 | 13.2 |
| II.—Other Clerks: Commercial | 6 | 10 | — | 1 | 17 | 9.0 |
| III.—Public Services (incl. Transport) | 23 | — | — | — | 23 | 12.2 |
| IV.—Agriculture (incl. Labourers) | 12 | — | — | 2 | 14 | 7.4 |
| V.—Proprietorial | 21 | 17 | — | 2 | 40 | 21.2 |
| VI.—Craftsmen and Independent Workers | 21 | 2 | 1 | 2 | 26 | 13.8 |
| VII.—Labouring (Domestic for women) | 11 | 10 | 5 | — | 26 | 13.8 |
| VIII.—Undefined | 11 | 6 | 1 | — | 18 | 9.4 |
| | 125 | 50 | 7 | 7 | 189 | 100.0 |

²⁰ This is a fair travelling radius under medieval conditions. See R. E. Dickinson. "The Distribution and Functions of the Smaller Urban Settlements of East Anglia." *Geography*, Vol. 17, 1932.

²¹ The classification is based on that in Census Returns, modified by amalgamation, as follows: I includes Government Workers; III includes Public Service and Conveyance of Men, Goods and Messages; IV includes Stationery, Dress, Food, etc. and Lodging. In VII, Domestic Service is included in Labouring. VI is a separate class for all craftsmen. The figures include the gainfully employed and those "seeking employment" (see A. M. Carr-Saunders and D. C. Jones. "Social Structure of England and Wales," p. 48), thus covering a small number of unemployed, mainly in the labouring class.

This shows a very small percentage engaged in agriculture (including four cattle dealers who are not farmers), and the entire lack of industry. The high percentages in Classes I, III and V clearly reveal that Tregaron is primarily a small complex of administration, retail trading and service, which focusses the life of a wide 'upland region.

Another factor which binds this area into a unit and which gives it an added significance is its social coherence and its human ties. Although family relationships cross the region intricately, Tregaron is always the centre. The movement of people into and out of Tregaron illustrates this to some degree. Fig. 6 shows the birthplace of the adult population (1947). Of the total of 383, 168 or nearly 47 per cent. were born in the parish itself, and 243, or nearly 70 per cent. of the total were born there, or in one of the seven contiguous parishes within a radius of five miles. This implies strong kinship bonds locally, for the percentage born outside the hinterland as described by the market region falls to less than 20.

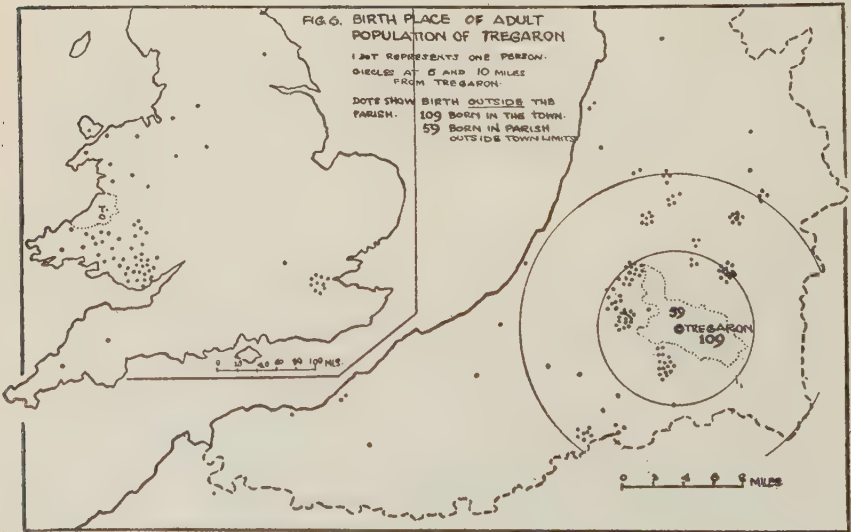
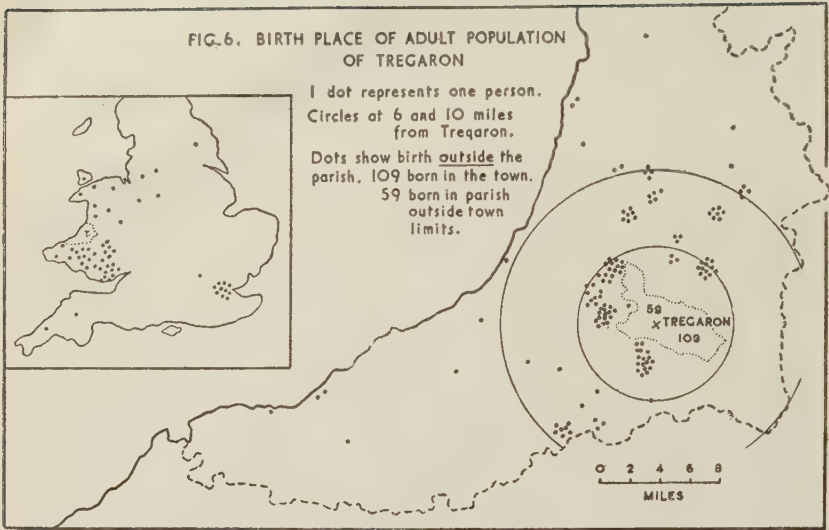
Such evidence is not restricted to this generation. Records showing localities from which new members were drawn to the chapel in 1839-45 and again in 1873-9²² show exactly the same features. In the first period, 77 per cent. of those coming in were from the area within a five-mile radius, and in the second period the percentage was 55.

This constant interchange of population within a well-defined area stabilises it as a community region. So many of those who fill the streets on market day are closely related. It is these who make Tregaron their centre, and it is their number, and not the number of residents, which is the clue to the status of its banks, shops and schools.

The term "town" is a wide one, and its use has had in it certain assumptions. Being such a general term, and covering an almost unlimited range in size, complexity and function, it has little meaning outside any definition which a writer may care to give it. But a definition framed to meet or exclude as the case may be the requirements of one given example is equally meaningless. The question involves history and function. The difficulty of terminology here is a serious one which cannot be overstressed. The present study is of a native Welsh settlement whose origin and growth were alien to the ideas associated with English settlement, so that English terminology such as "town" or "village" is not only inappropriate but can be misleading, unless examined thoroughly and justified. The Welsh word *tref*, which is the generic element in Tregaron, cannot properly be equated to the English "town"; it actually implies something very different from a nucleated settlement around a market which is the accepted English usage.

Although the basic pattern in Tregaron was added to so considerably in the last century, compelling re-definition, it retained the most

²² Record Books of Bwlchgwynt C.M. Chapel.



important element of the old—it was a market. The whole question of defining urban and rural settlements is one which has had little attention in Britain until recently, but one could agree with Dickinson that any definition of worth must be fundamentally concerned with function²³. Population and area areal extent are wholly unsatisfactory

²³ R. E. Dickinson. *Op. cit.*

as criteria. Herein lies the value of a definition of 1843 : " In England, any number of houses to which belongs a regular market, and which is not a city or the see of a Bishop, is called a town " ²⁴. The limitation of this definition is its simplicity, however, for it deals with only one function of an urban community—that of marketing, or the economic function ; similarly the word *tref* is completely inadequate to describe the complex unit of the 19th and 20th centuries. The approach must be in terms of all the relevant aspects—economic, social and administrative.

In functioning as it does, Tregaron discharges many of the requirements of a town, and has done so for at least a century and a half. Small as it is, it has many urban features, but apart from its function it has little in common with English towns. It has followed no civic tradition, for that was non-existent in Wales. When squatters and artisans came to live in Doldre, they were not coming to live in a town or urban community ; for they settled in tiny holdings with a cow, a pig and a garden ; they were merely living a little nearer their neighbours.

Evidence from the country district around Tregaron emphasises that in spite of the strong feeling of neighbourhood in any locality, this has never been focussed on a nucleated centre, apart from the need for a market in the town itself. A communal life with family bonds strongly suggesting those of the *tref* existed without visible elements. In other words, the rural life does not require—and never has required—a village upon which to focus. It was the hearth of each farmhouse in turn which fulfilled the social function. Here the families met and pursued their crafts, here they amused themselves with singing and games, here they met for worship ; and to the hearth in turn came the tailor, the carpenter, the cooper and the bookseller. Although they " neither inhabited towns, villages, nor castles," as Giraldus Cambrensis noted, the lives they led were far from " solitary."

To a certain extent this is still true of many country districts in which the only focus is a church, an inn, and a post office—general store. One such centre, that having route facilities, would inevitably attract those services which were a product of the 19th century, and focus a very much wider region. Morphologically, Tregaron is mainly the result of such a development ; functionally its significance has a much longer continuity. It is in the light of this that the origin and early development of the town can be understood. There never was a village or town in the English sense of the word until the last century, when the *treflan* did expand in answer to new needs and new conditions.

The *tref* is still reflected in the fact that the life of Tregaron is the life of the wider region beyond. Therein lies the significance of the phrase *ardal Tregaron* (Tregaron district), including all the elements of life in town and country. It is not merely exchange and economic dependence which weld them together, but kinship and loyalty and the ramifications of a closely knit society.

²⁴ *Parliamentary Gazetteer of England and Wales*, 1840-2, p. xxiii.

GEOGRAPHIC APPROACHES TO SOCIAL EDUCATION

HENRY J. WARMAN

The following article by the Secretary of Clark University, Worcester, Massachusetts, who is also Associate Professor in the famous graduate School of Geography in that institution, will doubtless be of great interest to members of the Geographical Association, as affording some insight into the approach and methods that are being followed by their American colleagues in dealing with problems parallel to our own. It represents the substance of an address broadcast from Station CJOR during the summer session of the University of British Columbia, Vancouver, which was intended to interest the Canadian and American listening public in geography as it is taught to-day. When the manuscript was received in Britain it was realised that much of the point of what Dr. Warman is trying to say would be lost if his readers were not acquainted with the bare framework of the American educational system in which his programme of geography teaching would find its place. He has accordingly drafted the following note, for which our warmest thanks are due.—EDITOR.

* * * *

In the United States there are two physical set-ups in regard to the educational plants or school buildings. There is the 8-4 arrangement, which means that in one building grades 1 to 8 inclusive are housed; in another building, known usually as a High School, Grades 9 to 12 inclusive are housed. A 9th grader would be known as a High School Freshman; 10th grader as a Sophomore; 11th grader as a Junior; and a 12th grader as a High School Senior.

The second of the physical set-ups in regard to educational plants is known as the 6-3-3 plan. The "elementary" school then houses six grades, the next three grades (7th, 8th and 9th) are in a Junior High School, and the last three grades (10th, 11th and 12th) are in a Senior High School. This latter plan is the generally accepted and desired one. The Junior High School has more to offer in the way of general assemblies, guidance programmes and sports activities for the entire student body. It is exploratory in nature.

The Senior High School, in the 6-3-3 plan, will perform essentially the same duties as in the last three grades of the 8-4 plan. The ages of the children would average 6 years in grade one; a year can then be added for each successive grade. Some youngsters who might have attended kindergartens or nursery schools may enter first grade at 5 or $5\frac{1}{2}$ years. "Seventh graders" are usually 12-13 years of age. Pupils graduating from the Senior High Schools are 17-18 years of age. Most States require attendance until a pupil is 16 years of age, hence the "drop-out" (due to low level of intelligence) is at grades 8, 9 and 10. Practically all pupils complete Junior High School.

The guidance programme mentioned as existing in the Junior High School includes, of course, a testing programme which has as one of its major functions the segregation of pupils into homogeneous groups on the basis of intelligence and aptitude tests. The exploratory programme of the Junior High School (grades 7-8-9) coupled with the guidance and counselling enable pupils, parents and teachers to select the proper course of study when the Senior High School (grades 10, 11 and 12) is reached. The courses of study are labelled Academic, Scientific, Commercial, General, Trades and the like.

The World Geography course proposed in this paper would be required of all 9th or 10th grade pupils.

Introduction.

The school programme in Social Studies has undergone considerable scrutiny and some changes in recent years. This is true of all phases of education. A war causes, first, an immediate inventory of our capacities to wage it successfully and, second, a re-evaluation and weighing of our nation's resources, both *human and natural*.

Attention was called during the war to four important aspects of the Social Studies programme. Dr. W. Linwood Chase mentioned the following aspects necessary for consideration :—

1. The war as a part of our curriculum ; where should it fit into the school programme.
2. Democratic living ; stressed as never before.
3. Friendliness toward other peoples ; toward our allies, and the realisation of its basic importance in peace.
4. The world-wide setting of modern life ; all wars to-day, all living to-day and to-morrow, are *global*.

The first point is largely one of the past now, but the war's end has in no sense released teachers from certain fundamental obligations they have *always* had.

During the war it became the schools' job, in most cases, to clarify the "whys" of fighting such a war, to interpret the programme pursued by the nation at war, to find a place for the children in such a programme. In like manner, *it is the schools' job to educate for peace. Growth in social and civic competence has ever been an educational aim, and civic competence is fostered through democratic living.*

Children can be taught that no nation can live to itself alone in this age of interdependence ; that if the labourer in one nation is ground under the heel of abject poverty or economic tyranny, it is the concern not only of his nation but also of all nations because such poverty and tyranny are the breeders of war which may spread over the world.

In the elementary school education will be concerned with the development of friendly attitudes toward other peoples. It must be realised that elementary school children cannot be expected to grasp details of an international organisation, the complexities of trade agreements, or most of the other difficult problems in bringing a just peace. However, the ultimate aims should include the following :—

- (a) A realisation that victorious and defeated nations will both need food, clothing, shelter, medicine and other necessities.
- (b) World-wide co-operation is necessary to win the peace, and that North American countries must be active members of whatever world organisation is set up.
- (c) People who vary greatly in ideas of government, in customs and tradition as well as natural resources are closer together to-day because of improved communications and transportation.
- (d) Racial prejudices and antagonisms are obstacles that must be overcome to have the kind of world in which we want to live.

We want our children to be able to face the world's problems with a profound belief in the democratic way of life which years of living in our schools have given them, and with a background of basic

knowledge which will enable them to consider intelligently proposed measures to achieve and cherish a lasting peace among ourselves and with all nations.

It is the duty of the administration and the teacher to provide the pupil activities within the school community which will foster the democratic way of life. Teaching and learning the ways of democracy are inter-woven through and around the complete school and out-of-school life of every child.

For elementary school children it is not likely that democracy will be studied as a separate unit ; the historical elements in it will rather be material used in other units, problems, or topics. However, there are characteristic elements of democracy which progressive and modern social studies teachers keep in mind. Here are a few :—

“Democracy means respect for the individual.”

“Democracy means co-operation with others.”

“Democracy means productive thinking—thinking problems through in such a way that results in helpful action for the good of all.”

“Democracy means that free men have duties as well as rights ; obligations as well as privileges.”

“Democracy means freedom for peoples under its government that cannot be found in the government of a dictator.”

The foregoing material gives us a view of what should be uppermost in the minds of the social studies teacher in the elementary grades. The next problem is to evaluate how it may be done. It has been said that no teacher should enter a classroom without having first answered the three questions : “What am I going to teach ?” “How am I going to teach it ?” and most important, “Why am I going to teach it ?” This presentation so far has tried to emphasise the “why” of social studies teaching.

Let us spend a moment on the approach which a geographer would use ; in other words the “how.” The geographer believes that there can be no satisfactory or complete understanding of man unless the environment in which man lives is understood ; and the study must be made of man’s adjustment to his environment.

Pre-School Days.

What geographic concepts are obtained by the children even before they have attended school ? Certainly our contacts with geography start early and may well continue to extremely old age.

1. Children get ideas about day and night.
2. Children get ideas about rising and setting of the sun.
3. Some question about the moon, its phases, the stars.
4. Changes in vegetation make impressions. Colours in autumn, flowering in spring, coming of rain and snow, wind effects, coming of birds, and their disappearance ; all experiences in nature begin to build fundamental concepts of natural world about them.

In an inexplicable manner these young children take on a sense of comfortableness, a security in the regularity, as well as the wonders, of the universe. Later on, they must be led to the realisation that man *must not be* the disturbing element in the natural setting.

Even in their homes and on the farms, the meal preparations, the planting, cultivating and harvesting, introduce lessons in geography without effort on part of parents or teachers. Visual images are based upon direct observations. The field work and field trips of geography have here their faint beginnings.

First and Second Grades of School.

There is usually a planned course in Nature Study. Leaves are collected, museums and rocks assembled, painting lessons are given. Records are kept of the coming and going of birds ; animals studied in their habitats.

Third and Fourth Grades.

Here systematic lessons in Geography (as a phase of Social Science) are organised in the schools.

Content of such formal work ordinarily includes :—

1. Study of home environment.
2. How people adjust themselves to that environment. Why there are farmers, trades, storekeepers, quarrymen, lumbermen, home builders, food producers.
3. Food, clothing, shelter of prime importance for communities, nations, and world. The three elements of subsistence are stressed along with—
4. Means and methods of travel, mail, communication.

By the Opening of the Fourth Grade.

Surely lessons in what may be thought of as journey geography should be introduced (children about 9 or 10). They are :—

1. Taken in imagination to other homes—journeys are wisely selected.
2. Types of home to visit are selected from the following (a) to (i) :—

(a) *Primitive homes, where dependence upon nature is obvious.*

Where people make own clothing out of skins or woven cloth, produce all food, build home of nearby materials. Little communication. Slight contact with other parts of the world. Contrast with home regions significantly pointed out.

(b) *Visits to lands of heavy rainfall and rich vegetation.*

(c) *Lands of slight rainfall—desert vegetation.*

(d) *Very cold climate lands.*

(e) *Very hot climate lands.*

(f) *Sea-coast lands.*

(g) *Lands—inland.*

(h) *Grassland regions—nomadic tribes.*

(i) *High rugged mountains.*

3. The globe should be used over and over again to show location.

4. Names of different continents appear from time to time.
5. *Great stress* placed on adjustment to natural conditions and emphasising of differences. The foundation laid for an appreciation of some of the *most fundamental problems that the people of the world must understand*. Before the close of Fourth Grade more of the pupils' home country should come in, and larger flat maps are usually introduced.

In the Middle Grades (Fifth and Sixth).

A study of the different nations of the world is introduced. Pupils should already have many definite concepts of geography and have studied adjustments of people to natural environment. Now is the time to see *how geographic factors influence the nations of the earth*.

In fifth grade it is common to turn to the American nations first. Some educators believe the home region of the nation should be the starting point, others study the American nations from east to west. The latter procedure has an advantage, for the work in geography correlates extremely well with the history being taught at this level. The points of emphasis in geography are :—

1. Problems of transportation ; these fit in well with history.
2. Language and common cultures, the Indian background ; differences from Anglo-American.
3. Home architecture.
4. Music and Painting.
5. Social customs.
6. The constant agriculture ; places where soil gets no rest.
7. The bases of industry and trade.
8. The need for world co-operation—since food enters world market constantly, every month.

Sixth grade geography calls for a study of nations beyond the seas. How colonies complicate the picture is evident at once. The pupil sees that many lands must be studied at one time.

Basic Concepts and Accomplishments Expected of Fifth and Sixth Grade Pupils.

1. Each pupil should recognise the geographic factors as being : climate, natural vegetation, soils, biotic and mineral resources, and man as a geographic factor exerting influence all the time.
2. Each should have a definite picture of each nation, and of the important geographic factors in each.
3. The human side should be emphasised.
4. Respect for people of other nations. The teacher must bring out their *best* qualities.
5. Pupils should know their country's contributions to the world ; and the other countries' contributions to their own ; by immigration.

There is usually too much factual material for this stage. The children are only 10 or 11 years of age. It must be remembered that *the human side is the important thing*.

Geography in the Upper Grades (or Junior High School).

Modern Geographers realise that now, in the upper grades, is the time and place to broaden the pupils' horizons. Here is the place to re-introduce the modern problems in the inter-relationships of the nations of the world.

Some geographers and educators disagree as to method, but all agree on the "world point of view."

The geographer uses these approaches to social education :—

1. He treats the home country in its world setting.
 - (a) More emphasis is placed on the economic development.
 - (b) And the relation of the country's economy to world affairs.

The difficulty usually is that too much time is spent on the home country; the other nations are slighted, or the treatment abbreviated.

2. Other modern geographers realise the grand opportunity to organise the work and study about occupations of people; thus stressing always the human side of geography. They do not take continents or nations but *life* of people on farmlands, people on pastoral lands; foresters, fishers, manufacturers. The great advantage of such an approach is that much use can be made of motion pictures.
3. A still more recent trend has been one toward "Pan-American Studies," "Spheres of Influence," "Studies in Hemispheric Solidarity." Great contrasts can thus be shown. Pupils always come back to the geographical base.

In closing, there are very important points to remember as we proceed to educate for better social living along the geographic path. *One* is that under the present school set-up this course, or these courses, may be the *last* systematic course in social science, or geography and history for most pupils before they move on into the responsibilities of world citizenship. The last geography course in the public school system should permit the student to leave with a *world point of view*.

One might ask—how can a person understand the concept of a United Nations, unless he has the ability to analyse some world problems?

May I repeat the modern geographer's plea—"There can be no satisfactory or complete understanding of man in the world to-day, unless and until the geographic environment in which he lives is fully understood."

ECONOMIC GEOGRAPHY AND GEONOMICS

C. J. ROBERTSON

BOTH British and American geographers have recently devoted increased attention to the problem of defining geography and collocating it amongst the other social sciences in research plans. Always near the surface of geographical consciousness, the reawakening of discussion on definition may be traced to several causes. The increasing difficulty of inter-communication between specialists within the university, recently emphasised by Sir Walter Moberly,¹ was to some extent temporarily counteracted during periods of wartime employment, when geographers, like others, were brought into closer contact with practitioners of associated sciences. Since the war increasing activity of geographers in non-academic work may have had a similar effect. The postwar expansion of the universities has raised new problems of organisation within geography departments, both in regard to their personnel and in regard to the training required by their students. Meanwhile, too, the critical survey of geographical thought by Richard Hartshorne in his work entitled "The Nature of Geography"² appears to have had a notable effect, particularly in the United States. Published discussion on the British side may be said to have broken out in the correspondence initiated in the *Geographical Journal* in 1946 by the late Prof. Fitzgerald's letter on social geography.³ On the American side, in addition to the frequent discussions in the *Annals of the Association of American Geographers*, a paper by Leonard S. Wilson in the *Geographical Review*⁴ raises some of the questions in acute form.

Dr. Isaiah Bowman, in his recent paper on "Geographical Interpretation,"⁵ emphasises that the naming of disciplines and defining of departments is "merely administrative order in school and university; it is not life." While the danger exists of excessive diversion of energy into such discussion, it must, on the other hand, be recognised that such definition, if not carefully considered, may eventually, through the medium of university curricula, exclude from the average student's purview certain aspects of study having a vital bearing on the immediate future of geographical research. It is proposed here to consider primarily the definition of economic geography.

The traditional dichotomy of regional geography and general or systematic geography dominates the curricula of university geography departments in the United Kingdom. If university calendars are

¹ Sir Walter Moberly. *The Crisis in the University*, 1949, p. 211.

² R. Hartshorne. *Ann. Assoc. American Geographers*, Vol. 29, 1939, pp. 171-658; second printing, with additional preface, abstract, bibliographical items, corrections and supplementary notes, University of Minnesota, 1946.

³ *Geogr. Journ.*, Vol. CVII, 1946, pp. 272-273.

⁴ L. S. Wilson. "Geographic Training for the Post-War World; a proposal." *Geogr. Rev.*, Vol. 38, 1948, pp. 575-589.

⁵ I. Bowman. "Geographical Interpretation." *Geogr. Rev.*, Vol. 39, 1949, p. 369.

to be believed, economic geography is more often than not regarded as falling within the systematic rather than the regional compartment. The view may be held, however, that the distinctive contribution of geography amongst the social sciences is the concept of the region and the technique of regional delimitation. Thus, if the definitions implied in many university curricula are taken at their face value, the economic geographer is liable to find himself in the uncomfortable position of having the ground cut away from under his feet through having his activities relegated officially to the systematic part of the programme. For, while the general or systematic approach results in the cartographic expression of certain patterns in world economic development, the areal units that make up the patterns can be explained only through deeper analysis of the way in which the complex of economic relationships or, to adopt Renner's phrase,⁶ "socio-economic adjustment," finds a different integration in one area as against that in another.

Given that economics is in essence the study of the organisation of production and distribution, the economic geographer studies in the first place the regional differentiation of this organisation. P. R. Crowe⁷ has already emphasised organisation as the regional matrix. Research in economic geography must therefore mean in the first place detailed regional study, down to microgeographical studies such as those of R. S. Platt and others.⁸ Only secondly comes the more general or systematic facet, the study of the pattern built up by these different regional economic ways of life. The world pattern, if any, becomes apparent only when the results of such unrelated regional studies are compiled in cartographic form. While a comparative regional economic geography is possible without these world maps, it would seem more open to discussion whether a geography that endeavours to lay down principles can be built up without the world pattern, and whether such a world pattern can be built up save on the basis of features so general that they have only small delimiting value. In other words, is the individuality of regions so great that the only practicable geography is one which regards each region as unique?

If systematic geography is regarded as the study of individual aspects on the world scale—for example, climate, vegetation, communications, industry—the need for research competence in other fields than geography—in these instances, climatology, botany, economics—would seem apparent and the more advanced the treatment the more the geographer's work would seem to merge into that of the respective associated science. It is just here that Leonard S. Wilson's argument that "mappable patterns" are the core of geographical research appears to detract from the specificalness of geography, for the

⁶ G. T. Renner. *Ann. Assoc. American Geographers*, Vol. 25, 1935, p. 137.

⁷ P. R. Crowe. "On Progress in Geography." *Scot. Geogr. Mag.*, Vol. 54, 1938, pp. 1-19.

⁸ R. S. Platt. *Latin America: Countrysides and United Regions*, 1942.

ideas or systems of ideas expressed in the mappable patterns may have little or nothing to do with geography as generally understood, cartography being merely the language in which the results are communicated. The same writer complains, in fact, that regional geography has failed to "chart a course through the shoals and reefs of associated subjects without which geography cannot thrive."⁹ It may be agreed, indeed, that the pursuit of regional economic geography, like that of systematic economic geography, means a very intimate association of geography and economics. In fact, as far as research is concerned, training in both geography and economics would seem desirable.

With the geographical region no longer regarded merely as a section of environment but as a human creation the importance of the other social sciences in the geographer's training, even if only as "cognate subjects," was enhanced. For the economic geographer an adequate understanding of the internal and external relations of the region obviously involves an appreciation of general economic factors of production and trade. This would seem to mean a much wider economic field than the aspects of land and minerals apparently envisaged as common ground for geographers and economists by the late Lord Stamp in his presidential address to the Geographical Association, a paper that appears incidentally to assume an environmentalist geography.¹⁰ Absence of economics in the economic geographer's training is only comparable to absence of geology in the training of the geomorphologist.

Rather outside the scope of regional economic geography or of its derivative systematic economic geography lies a wide range of problems on the margin of geography and economics and generally on the national or international scale. Aspects of national economy such as the effects of geographical conditions on the national income and on the planning of national resources; trade relations as affected by geographical factors; relations with certain markets; the problems arising from very high degree of dependence on certain exports or from highly concentrated localisation in the production of certain commodities¹¹; the location of world resources; colonial development; the distribution of investments; international economic groupings—all these are topics in which place relations obviously enter but which are yet rather wider than can be coped with by regional economic geography or even, in their economic implications, by systematic or general geography. On the other hand, they are questions with such a strong basis in place relations that the economist's treatment frequently seems to the geographer insufficiently realistic.

⁹ L. S. Wilson. *Op. cit.*, p. 578.

¹⁰ Sir Josiah C. Stamp. "Geography and Economic Theory." *Geography*, Vol. 22, 1937, pp. 1-14.

¹¹ C. J. Robertson. "The rice export from Burma, Siam and French Indo-china." *Pacific Affairs*, Vol. 9, 1936, pp. 243-253. "Monoexport in Africa." *S. African Journ. Economics*, Vol. 8, 1940, pp. 1-18.

Some aspects of commodity geography would also be included, though the writer would place detailed study of commodity production in a limited area within the scope of regional economic geography¹². Some of these topics are still traditionally included in the textbooks of economic geography; others, at one time found in geographical-statistical compendia, have been dropped and are in danger of being relegated to a no-man's land. The great diminution of geographical facts in the writings of economists from the time of Adam Smith to that of Keynes was noticed by Lord Stamp in the paper already mentioned. This might be even more apparent if Sir William Petty were taken as the starting point. The economic geographer, in taking up the study of such topics, is not so much stepping across the frontier of economics as making an independent contribution to many problems of common interest to geographers and economists.

This marginal study might be given the name of geonomics. One is tempted to say that it would put the "ge" into economics¹³. It is here suggested as a parallel course of study to economic geography, whether the latter is limited to a regional emphasis or includes also systematic economic geography. The distinction between economic geography and geonomics may be compared with that between political geography and geopolitics. The dynamic possibilities of geonomics give it a policy-making character. The increasing part played in Great Britain by deliberate planning makes the relation of geography to other social sciences in general a matter of great topical interest in university training. In the particular instance of geography and economics, the character of some of the topics tentatively listed above as geonomics gives them at this time special significance in training and research in Great Britain.

¹² C. J. Robertson. "Italian rice production in its regional setting." *Geography* Vol. 20, 1935, pp. 12-27.

¹³ Cf. S. W. Wooldridge. "On taking the 'ge-' out of geography." *Geography*, Vol. 34, 1949, pp. 9-18.

POST-WAR PROGRAMME OF THE ORDNANCE SURVEY

A Description of O.S. Small Scale Maps, 1947.

A Description of O.S. Medium Scale Maps, 1947.

A Description of O.S. Large Scale Maps, 1947.

15.5 × 25 cms. v + 21 pp. Chessington: Ordnance Survey Office.
each 1/6.

A PREFATORY note to the pamphlet descriptive of Small Scale Maps runs as follows:—

"When the war broke out in 1939 the Ordnance Survey was about to begin a programme based on the recommendations of the departmental committee presided over by Lord Davidson which reported in

1938." Instead of beginning on this programme the Ordnance Survey had to use its resources to produce maps for the Army. Moreover, during the war several buildings of the Ordnance Survey and many of its records were destroyed. Also, stocks were depleted by sales, especially of one-inch maps, but all this was only an intensification of pre-war difficulties. Neither staff nor equipment was sufficient to bring the work up-to-date, especially the survey in the field. The Davidson committee worked out what alterations were needed in the organisation of the survey and in the set-up of the maps and what new series should be inaugurated.

The war over, the Ordnance Survey was free to turn to the formidable task of providing a new series of maps in accordance with the recommendations of the Davidson committee. Formidable as the task was it was in some respects simplified by the destruction of maps and material.

If the maps are to be accurate and up-to-date a regular survey in the field is necessary. Such revision was authorized in 1882 and it was hoped that there would be revision every twenty years, but this was made impossible by the first world war and the subsequent application of the Geddes Axe which cut down the number of surveyors. In the result, the resurvey fell hopelessly behind and any regular rotation had to be abandoned and revision undertaken only in those areas where necessity urgently demanded it. The number of surveyors has now greatly increased, but the pace of the revision is still retarded because it takes time to train the surveyors. The position is now much better than it was, but it will take time to overtake the arrears.

In 1912 there began in the field the new geodetic levelling based on the Newlyn datum. The older altitudes were based on the Liverpool datum which was unsatisfactory. Other errors, too, had crept in. The altitudes as now computed are more accurate.

Even more important is the change in the projection adopted. Up to the time of the Davidson committee the Cassini projection was used for all scales except the one-inch England and Wales. With this projection there is north-south distortion which increases with the distance east and west of the central meridian, but is negligible at distances not far from that meridian. The means adopted to deal with this situation was to divide the country into thirty-nine county groups each with its own central meridian. This meant that the maps of areas with one central meridian did not fit on to the maps of adjacent areas which had another central meridian. The difficulty has now been overcome by making use for the whole of Great Britain of a new projection—the Transverse Mercator, based upon an origin at 2°W and 49°N.

The current one-inch England and Wales and two-and-a-half-inch G.B. maps are drawn on this projection. The provisional six-inch maps of Great Britain on national sheet lines based on the Transverse Mercator projection began to appear in March, 1949. Side by side with these have appeared six-inch maps on county sheet lines on the

Cassini projection. All provisional six-inch maps will ultimately be replaced by regular six-inch maps on National Grid sheet lines drawn on the Transverse Mercator projection. Also, air-photograph mosaics approximately on the six-inch scale are being published, the sheet lines of which are the same as those of the proposed six-inch National Grid maps. These serve to supplement and bring up-to-date the existing six-inch maps. Publication is limited to specific areas.

New plans, also on the Transverse Mercator projection are being published, on both the 1/1250 and 1/2500 (or twenty-five-inch) scales.

Another very important new feature introduced into all Ordnance Survey maps is the National Grid, which is being incorporated on maps of all scales. It provides one reference system for the maps of the whole country.

The position of any point in Great Britain is given by its distance in metres from two lines at right angles passing through a point off the Southwest of Cornwall. The system is explained on each map and more fully in the pamphlet. *A Brief Description of the National Grid and Reference System*. (H.M.S.O. 6d.). The grid references of towns and important villages are given in the *Gazetteer of Great Britain* (Ordnance Survey, 5s.).

The position now is that all the quarter-inch and all the one-inch maps have been published. The current edition of the one-inch map of England and Wales is the 6th (New Popular). The sheets of Wales and North England are based on the 4th edition, those of Southern England on the 5th edition. These maps have new sheet lines. The present maps of Scotland are drawn on the Cassini projection: the one-inch maps have all been published.

The two-and-a-half-inch maps are in course of publication. Most of those for England have been published and also many of those for Wales and Scotland. The edition of each map is limited so that a reprint may have any further information inserted. The map is under constant revision.

New editions of the quarter-inch and one-inch maps are projected and a pilot sheet of the one-inch, 7th edition, has been prepared. The sheet lines remain the same but the maps are to be redrawn and fully revised. The reproduction from the new drawings will be much clearer than the present 6th edition.

A new half-inch map is also projected.

In addition to these there are other maps which can be of great use for special purposes. Among them are the following:—

(1) An outline edition of the one-inch sheets printed in black and grey; (2) Two tourist maps, one of the Lake District and one of the Trossachs; (3) Half-inch County Administrative maps; (4) An outline edition of the quarter-inch map; (5) Quarter-inch Civil Parish Indexes; (6) A series of 1/625000 maps; (7) Maps on the scale of 1/1 million; (8) Period maps: Roman Britain and Britain in the Dark Ages; (9) An outline map showing boundaries and names of counties (Price 3d.); (10) A map of Great Britain on the scale of 1/1½ million in black and white.

What has here been attempted is a brief survey of what the Ordnance Survey has accomplished since the end of the war and what are its plans for the future. A fuller knowledge can be obtained by a study of the three pamphlets named at the head of this review, though it should be remembered that much has been done since their publication and more is being planned. The maps are termed provisional but that does not mean that the work is sub-standard. It does mean that the maps are not perfect. It can also be claimed that an attempt has been made to make them as good as the material and the limited time have permitted. An immense amount of time and energy has been put behind the task and the further ambition is to improve the maps and make them as good as possible.

Special attention may be directed to the two-and-a-half-inch maps—a new series which should be of very great value in the school and also to the maps on various scales which can be most useful but can be easily overlooked.

Finally, the gratitude of this Association is due to the Ordnance Survey for making available water and contour “pulls” of the maps. It is true that these are not stocked by the Ordnance Survey and that execution of an order has to await the printing or re-printing of the map ordered, but those “pulls” are invaluable for bringing out the relief of an area. The procedure that must be followed to obtain them was detailed in *Geography*, 1947, pp. 39 and 76. T.C.W.

OBITUARY

H. W. OGDEN.

H. W. Ogden, who died last October at his home at Flixton, near Manchester, at the age of 68, was formerly second master and senior geography master at the Central High School for Boys, Manchester, and one of the outstanding figures of Manchester Geography. For many of the thirty years of his association with the Manchester Branch, he acted as its Chairman and latterly was one of its Vice-Presidents. When he retired from active teaching in 1945 the Branch instituted, in recognition of his services, the Ogden Prize, awarded annually to the most successful candidate in the principal geography papers of the H.S.C. examination taught by a member of the branch. Equally vigorous were his interests in the Manchester Geological Association which he joined at its foundation and served as council member and President; in the latter capacity he delivered a notable address on the geological factors governing the sites of early settlements in Cheshire. He had active contacts with other Manchester bodies such as the Textile Institute, the Chamber of Commerce, and the Education Committee, and was a collaborator in a book on “The Inland Port of Manchester,” for boys and girls published in 1938.

Outside Manchester he is chiefly known for his studies in the water supply problems of the cotton industry embodied in papers published by the Textile Institute and the Manchester Geographical Society in

1927. His conclusions on the relation of the distribution of the industry in its formative phases to the "Ogden line" delimiting the areas of soft water have been re-affirmed by later works, and his study of the Irish Linen Industry is still regarded as authoritative.

H. W. Ogden was a zealous champion of the cause of the recognition of our subject in schools and universities whose efforts were untiring and unlimited. Gifted as a teacher, sound as a scholar, thorough in the extreme, and most human in his daily relationships, he was a man to whom teachers of the present generation owe more than they can readily appreciate.

D. R. HUDSON.

WALTER FITZGERALD.

Walter Fitzgerald was one of a company of ex-service men of the 1914-18 war who passed through the Liverpool School of Geography in the early twenties and who subsequently attained headships of University Departments. His first academic post was in South Africa, at Pretoria, and he retained his interest in Africa to the end: indeed, he had just completed arrangements shortly before he died to re-visit Africa during the Lent Term of 1950. He returned from South Africa to England to the University of Manchester when the late Mr. W. H. Barker was Reader in Geography, and he remained in Manchester until his death, becoming Senior Lecturer during Professor Fleure's occupancy of the Chair, and finally succeeding to the Chair himself in 1944. Fitzgerald published, in addition to papers, *The Historical Geography of Early Ireland* in 1925, *Africa* in 1934, and *The New Europe* in 1945. He had just completed a revised edition of the last before his death. Although this last book is the better written and embodies a number of interesting concepts, it is the more controversial and it may be that his *Africa* will endure the longest.

Fitzgerald had a vivid lecturing style and was a fluent talker. He could be a most charming companion, though rather extravagant in his likes and dislikes. He was a disciple of Roxby and never tired of declaring his attachment to his master. Roxby's concepts were strewn through the pages of his books, although, as a disciple, he sometime stated them more dogmatically than his master would have done. He held fast to the concept of geography as a study of regions. "The argument . . . is, in effect, a recommendation of the regional method in the study of geography. It is, indeed, more, for it suggests that there is no alternative approach. The geographer's unit is the region, and only by reference to it does he make his distinctive contribution." (*Nature*, Vol. CLII (1943)). His *Africa*, is the concrete embodiment of this view and it is certain that his best work was, in fact, the construction of a regional synthesis. How he would have succeeded with a work of rigorous critical analysis we shall now never know.

WILFRED SMITH.

Entering Liverpool University as an ex-Service student in the immediate aftermath of World War I, Walter Fitzgerald, like many who sat under that great personality and teacher, Roxby, caught a

vision and was seized with a sense of a mission. No one, perhaps, was more powerfully or lastingly affected than he. The vision not only endured, as it has done for others, but continued throughout life to be the source of all inspiration, whilst the sense of a mission seemed, if anything, to strengthen with the passage of years. It may be judged that this was not wholly to the good, that at times it was perhaps the omnipotence of the vision that was responsible for some lack of critical insight. Yet if this be so it was, surely, only because of the reasons given that he was enabled to labour so long, without respite, and to accomplish so much both as a teacher and researcher notwithstanding that meanwhile he had had more than his share of personal anxieties and that only rarely was he ever completely free from physical suffering. In the course of something like a quarter of a century he made contributions to geography for which students everywhere were grateful especially for his *Africa*, which filled a serious gap in advanced geographical text books, and he came to win for himself a leading place among British geographers.

Like many crusaders he tended to be imperious but, on the other hand, some found in him a warm and helpful friend. It is especially sad that death overtook him at the comparatively early age of fifty-one, in the height of his career, and more than ever eager to get on with tasks which he felt himself called to undertake. The profound sympathy of all goes out to Mrs. Fitzgerald and to Desmond, his four-year-old son.

A. V. WILLIAMSON

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CORRESPONDENCE.

AN EXPERIMENT IN VISUAL EDUCATION

I should like to congratulate Mr. H. L. Harris on his concise and businesslike report upon an educational experiment (*Geography*, Sept., 1949). In a field where so many variables exist, and are often unrecognized by experimenters, it is refreshing to see a scientific attempt to reduce them, by the application of an objective test, a control class, and careful comparison of conditions. The statement of possible objections to the conclusions reached and the mention of further trials should be brought to the attention of those educationists whose enthusiastically conceived experiments are followed by vociferous exhortations to others to imitate them. Such persons are often unaware of the internal inconsistency of their attitude when they are shocked by the suggestion that they should repeat their experiments themselves. But experiments upon the minds of children can be justified only if the results, positive and negative, are utilized for the benefit of children. This can be done only if it is known which factors are contributory to success. I believe that the main factor in the success of many experimenters is the impact of their own energetic personalities upon the children. No one would deny the importance of the individual teacher's influence, yet this is often entirely discounted in assessing the effect of any particular educational method. When it is taken into consideration it may invalidate even large-scale experiments, such as that which investigated the "natural likings" in geography among schoolchildren. In disagreement with the findings of that enquiry I have always found that the majority of my pupils have preferred physical geography, and I regard this as a reflection of my own absorbing interest in it. Many teachers have not enjoyed a sound schooling in physical geography. They are often distrustful of their power to teach it, and naturally enough their classes prefer other branches of the subject. I am sceptical of any wholesale bias of "natural interests" among children, and shall remain so until I find statistical evidence that such interests defy correlation with the interests of their teachers.

I should like to pose a few questions for consideration by Mr. Harris, or by others who have ungraded control classes which they are willing to use in following up his experiment.

(a) Is it possible that this is a personal result, i.e., that though the film strip could not outshine the lucid presentation of the experimenter it might succeed in competition with less gifted teachers?

(b) Is it possible that grammar school classes, being selected for academic qualities, learn more easily from a verbal presentation than from a visual one, while at the same time chalk and talk would be less successful in a modern school? To reverse the viewpoint—Are we retarding more intelligent children by the use of methodological conclusions reached in backward classes?

(c) Is it the case that latitude and longitude is a subject which lends itself to chalk and talk, while other topics might produce an opposite result?

I do not suggest the answers to any of these questions must be yes. I am not in a position to test them out. But I stress them, together with Mr. Harris's own impartial comments, as the type of question which should be more fully asked by educational experimenters.

Alice Coleman.

University of London, King's College.

The short, but very valuable article by H. L. Harris, on the relative failure of Visual Education in his school experiment should help us to realise two things:—

1. The danger of following a fashion!
2. There is no correct or best way of teaching geography.

Each teacher has his own best way, often suggested by his particular interests. It is useful to know what others do, and to try these things for oneself, but the teacher who cultivates his own individual approach and method is generally more inspiring and more successful.

Arthur Davies,

University College of the South West.

GEOGRAPHY TEACHING IN GERMANY.

May I be permitted to add one or two points to the article by Miss Cocks and Mr. Shave on the teaching of Geography in Berlin?

I have attended two similar courses in the Western Zone of Germany, and at each our delegation was confronted with combating the approach of the German teacher to geography through local study. I believe this to be a real menace to world peace as it breeds that introspection which can produce unhealthy nationalism. I believe, however, that the fault lies, not so much with the Secondary School syllabus, as with the method by which the subject is treated in the Primary Schools. The syllabus which has been proposed and adopted for the schools of North Rhine/Westphalia does, in fact, represent a small lean-over to our way of thinking, although Europe, in general, and Germany, in particular, still play too prominent a part in it. There are, of course, many points in favour of commencing the geographical survey with the local area, and working in ever widening circles, and were the first four years of Primary School not devoted almost entirely to the Motherland, the Secondary School syllabus might be viewed in a very different light. That a standard syllabus must be adopted I am convinced; it satisfies those national characteristics of methodical development and tidiness of mind which are inherent in almost every German.

There is now a very strong Geographical Association in the Western Zone under the presidency of Professor Julian Wagner of Frankfurt University. The Association publishes a monthly journal—*Geographische Rundschau*—and there is a local branch in each *Land*,

with a representative in all the larger towns. The N. Rhine/Westphalia branch meets once a year for a congress. The textbook situation is happily much improved. To my knowledge five school geography textbooks have been produced during 1949 and there are several more expected in 1950. The quality of the paper is improving. The revised Wenschow atlas is expected early next year and three other firms have produced school atlases during the last twelve months. The latest of these shows frontiers, by agreement with the Control Commission; place names in the Polish occupied zone can now be given in German, and scales of 1 : 150,000 can be used for neighbouring countries.

Clifton College, Bristol, 8.

TOM BROWN.

This last summer a party of boys from Blackfen County Secondary School were taken on their annual school journey to Salvan in Switzerland. This alpine village, situated as it is in a part of unspoilt Switzerland, proved such an ideal centre for a school holiday and for visits to such well-known places of interest as the Hospice of the Great St. Bernard Pass, the glacier of the Mer de Glace with its interesting ice-grotto, and many other places of geographical interest that I feel other teachers would like to have some information about this region and what it offers both during the winter and summer months.

Therefore, I have asked Mr. A. C. Gissing, who was our host, to write the short account about the Trient Valley and its many amenities, which is given below.

Readers contemplating taking parties to Switzerland can obtain full details as to accommodation, costs, etc., which we found very satisfactory and reasonable, from Mr. A. C. Gissing, Villa Javelle, Salvan, Valais, Switzerland.

Blackfen County Secondary Boys' School,
Sidcup, Kent.

J. W. WATTS,

THE TRIENT VALLEY.

At the end of the jagged peaks of the Brévent Range, within near view of the eternal snow of the highest mountain in Europe and its array of shining glaciers, is one of the sources of a rocky torrent known as the Eau Noire. After arriving at the head of a wild avalanche-swept valley, it enters the vale of Vallorcine, once as its name implies, the haunt of bears. A short run brings it across the French frontier into the first Swiss village, Le Chatelard, deep down in mountain shadows; beyond which it is joined at right angles by the Trient River which gives its name to the remainder of the valley until it joins the Rhône.

It is this latter section of the valley which has for many years fascinated the artist, the writer and the mountaineer, and which proves so attractive to those visitors who prefer the scenery of unspoilt Switzerland to the widely-advertised, fashionable resorts. The French writer, Emile Javelle, was among the first to discover its charms,

Ruskin explored it, and found on its hard, rounded rocks the most interesting glacier scratches he had ever seen. Less than a century ago English lovers of quietness and beauty discovered Finhaut, and hotels began to spring up there. Salvan and Les Marecottes, which years before, with Finhaut, had been summer pastures grazed upon by herds of gentle cattle with their deep-toned bells, partly as a result of Javelle's writings now began to draw the attention of the holiday-maker who loved Switzerland for its people and its mountains. Modest hotels began to spring up at these places, too. This was before most of the fashionable holiday centres had come into existence.

Les Marecottes and Salvan are situated on an irregular plateau of forest and pasture-land, from 3,100 to 3,300 feet above sea-level, and fringing the deep, shady gorge through which the Trient flows before it enters the Rhône. Less than fifty years ago they could be reached only by private carriage, but now they are linked to the main line below by a marvellous rack and pinion railway which climbs up from Martigny around almost impossible mountain slopes, in little over half-an-hour, and continues to Vallorcine and so onwards to the valley of Chamonix. A good motor-road has of late years come into being, and this crosses the Trient gorge by a single-span bridge, reputed to be the highest above ground level in Europe. Both road and rail are miraculously kept open no matter how deep the winter's snowfall.

Apart from its natural beauty and the charm of its French-speaking inhabitants, who are devoted to all things English and do everything to make the holiday of the English visitor a success, the Trient valley is so located as to be within easy reach of places that are world-famous, and which can be visited at relatively little expense. Less than twenty miles away is Chamonix and the Mer de Glace; the Hospice of the Great St. Bernard is almost as near. Champex lake can be reached in an hour or so. Montreux, and the Castle of Chillon with its superb background of the Dents du Midi forming a picture not easily to be forgotten, is less than an hour from Martigny. The Trient glacier is within easy reach, and so is the sensational funicular which lifts the tourist through regions of gradually increasing splendour to one of the finest views of Mont Blanc, and enables him to visit with ease the high lake of Barberine.

The botanist will discover a paradise of alpine flowers in the valley of Emaney above Les Marecottes, and the geologist will find food for endless study among the ice-scarred rocks about Salvan, and in the complicated folds of the Dent de Morcles. The seeker of winter-sports to whom ski-ing is as yet an untried art, will find gentle, easy slopes of snow in winter, where, by the aid of a Swiss instructor, he will soon gain confidence and balance. The mountaineer has the Luisin, the Salentin, and all seven peaks of the Dents du Midi within easy reach. The walker has a great variety of enchanting tracks to follow and superb viewpoints to visit.

Those who live in the valley of the Trient find that it never loses its charm. It is always somewhat of a fairyland. In looking at its

groups of chalets perched fantastically on the shelving mountain slopes one loses a sense of their reality. Raising one's head to the great granite pinnacles of the Luisin piercing into the deep azure of the sky one half forgets that they are real. They are so like glorified stage scenery. It is hard to believe that here, in the midst of this landscape with its little clusters of picturesque dwellings, ordinary people live and go about their daily toil. The scene is too much like a fleeting glimpse of the ideal landscape, the landscape of pictures familiar to us in the works of the great Italian painters, to enable us readily to connect it with the world of to-day. Even the little red train, as it winds patiently hither and thither finding the gentlest inclines, now on the verge of a sheer precipice, now passing through dark forests of pine and larch, or round mighty ice-smoothed boulders, and finally, when all outlet seems barred, disappearing silently into the heart of some massive wall of rock, resembles more the plaything of a child than a practical reality.

There is so much more to be said about the Trient Valley than I can set down here, but I should like to make a passing reference to its wonderful sunshine all the year round, its serenity and freedom from wind, sheltered as it is by great mountain walls to the north, its fine avalanche displays when the winter snows begin to melt, the giant icicles, bigger than church steeples, which hang aloft from the precipices of the gorge and crash down with a roar when the spring sunshine loosens them. But, perhaps, these things are of more interest to the resident than to the English visitor.

A. C. GISSING.

A GERMAN TEACHING SUGGESTION

In the autumn issue of *Geography* you were good enough to publish a short report on our Anglo-German Vocation Courses held in Berlin last spring.

It occurs to me that some of your readers might be interested in a suggestion made by one of the German teachers during the course and tried out in some of my geography classes since. It is that the children should keep minutes of the lessons. I have adopted the scheme with the second and third-year forms of this mixed Grammar School for the past two terms and the children are still enthusiastic about it. The advantages of such a procedure are too obvious to be set out here, and the five minutes or so that the reading, correcting, and signing of the minutes take are well worth spending. Needless to say the children have a rota for the post of chairman and secretary, respectively, and for the most part have held these offices with great efficiency. For my part I shall be interested to see how far up the school each form will want to continue its minutes, and to see if it becomes less or even more critical of the secretary's efforts as time goes on.

Eggar's Grammar School, Alton, Hants.

DOROTHY E. COCKS.

GEOGRAPHICAL ASSOCIATION.

ANNUAL REPORT, 1949

The work of the Association has been beset with some difficulties and the year has not been without serious losses. It was a matter for much regret, that early in the year our Chairman of Council, Mr. Fairgrieve, felt obliged, through serious illness, to relinquish all offices which he held within the Association. We extend to him sincerest wishes for his recovery to health and an expression of our gratitude and appreciation for his untiring efforts for the Association over so long a span of years.

We record with deep regret the deaths of Mr. Ogden, a senior member of the Manchester Branch, whose work as a geographer and as a leading member of the Association long since has been commemorated in Manchester by his colleagues; also of Mr. Bainbridge who, as local secretary of the Carlisle Branch, did invaluable work for the Association in that region. The close of the year brought another serious loss in the sudden death of Professor Fitzgerald, Head of the Department at Manchester University since the retirement of Professor Fleure in 1944.

To our retiring President, Sir Harry Lindsay, a special word of thanks is due, for the time and thought he has so generously spared on our behalf in presiding at Council, Executive Committee and other meetings during his period of office. His friendship and help will long be remembered by those privileged to serve with him. Professor Dudley Stamp, whom we welcome as President for 1950, needs no introduction to our members. We are proud to honour so distinguished a geographer, and one who, in accepting office, for the first time repeats "family history" associated with the name of his brother, the late Lord Stamp, our President in 1936.

Report was made last year of the position with regard to our Headquarters in Manchester, where, since 1930, we have enjoyed the generous hospitality afforded by the Manchester Education Committee. We had hopes that alternative accommodation would be found for us in Manchester. This, unfortunately, proved not to be possible and available accommodation in one of the Corporation's buildings could only be offered at charges far beyond our means. Alternative office accommodation was sought elsewhere in the city, and the possibility of buying a house was also considered, but in every case the proposals were found to be far too costly.

Meanwhile, through the good offices of Mr. J. P. Lamb, the City Librarian in Sheffield, and with the co-operation of the City Libraries Committee, the City of Sheffield offered us accommodation free of any charges, in the buildings of one of the City's Branch Libraries. This offer the Executive Committee has accepted and we hope to remove from Manchester to Sheffield in April, 1950. In difficult times such as the present, so generous an offer cannot be measured merely in terms of the substantial financial saving which it affords us, nor can we adequately express our indebtedness and thanks to Mr. Lamb for his help at a time of such need. We shall leave the City of Manchester and our many friends within the Manchester Branch of the Association with real regret; we express warm thanks to them for all that they have done for the work of the Association at Headquarters during the past two decades.

Our membership during the past year has declined to numbers approximating to those of the pre-war years. This decline has not been unexpected, in view of rising costs and the further closing of emergency training colleges on the opening of which the somewhat phenomenal early post-war expansion of the Association largely depended. The number of full members in 1949 is 3,417, and 634 student-members (compare 3,646 in 1939). We urge our members to do all in their power to maintain or increase our membership. There is need, more than ever, for teachers of geography to unite for the furtherance of the cause of their subject amidst the educational changes and adjustments that are in progress and in prospect.

We place on record our thanks to our colleagues and friends in Liverpool, and in Bangor, Northern Ireland, who made possible the highly successful and very well attended Spring Conference and Summer School for Teachers at these

two centres, respectively, in the course of the year. It is hoped that from time to time other summer schools may be organised, if members indicate a desire for these.

During the past year no new branches have been formed; one old branch has been revived. One branch (S.W. London and N.E. Surrey) has been wound up and one is for the time being inactive. Fifty-eight branches are maintaining and fostering local interest in the work of the Association and we are considerably indebted to those branch officers who so strenuously, and often in the face of considerable difficulties, organise successful and varied branch activities in all parts of the country. Branch reports show that, in addition to lecture programmes, field work and field excursions are becoming an invaluable and increasingly important aspect of branch activities; we welcome, especially, the enterprise of the Bristol Branch where a Field Study sub-committee has been set up with the aim of encouraging the L.E.A. to assist teachers to develop field work as part of their teaching, and to consider the establishment of a suitable centre for Junior Field Studies in the Mendip region, where classes of about twenty-five children may make field studies in Geography, History and Biology for a period of a week or fortnight.

We welcome opportunities that have been afforded by the Foreign Office and by some of our members, whereby contacts with our German colleagues in Berlin and Brunswick are being revived. As an experiment, branches of the Association are being formed at those centres, though in the nature of things they cannot enjoy all branch privileges. We hope to foster international contacts of this and other kinds in the future, as an important part of the work of the Association. Jointly with the Historical Association, we were able to assist the British Council in entertaining a party of Swedish teachers of geography and history who visited this country during the summer.

The activities of the various sections and standing committees continue to expand. The *Primary Schools Section Committee* has completed the preparation of a new Handbook for Primary School teachers of geography, and this should be on sale early in the New Year. The *Training College Section Committee* has assisted the Primary Schools Committee and twice during the year has held one-day conferences for its members. Other activities have included work concerned with a report on a questionnaire regarding the treatment of Geography in Training Colleges and Departments of Geography, and the revival of a research sub-committee of the Section, concerned with methodology.

The *Secondary Schools Section Committee* has continued work on the Handbook for Geography in the Modern School, and it is hoped that a publication will be ready for the press in the course of 1950. The Section Committee has also co-operated in the revision of the VI Form Reference and Background Reading Book Lists, and is now turning its attention to the preparation of reports on the requirements of School Atlases, in schools of different types, and to the problems of old lantern slides and new projectors.

The *Standing Committee on Urban Spheres of Influence* under the chairmanship of Mr. Smailes has now drafted a questionnaire which will be distributed, in the first instance, to the grammar schools in W. Sussex, Hants., and Dorset, early in 1950, and in other areas in due course. From these questionnaires it is hoped to elicit the information required for the Urban Survey, and members are therefore urged to give their support as the initial work of the Survey is developed.

The *Standing Committee for Visual Aids* has been active in many directions in matters concerned with the expansion and development of facilities for teachers, and our representation on official national bodies.

In association with these many activities, work at our own Headquarters has grown apace, despite space limitations and staffing difficulties. Mr. Warrington continues to give invaluable help as our Ordnance Survey liaison officer, and our librarian, assisted by Miss Mander, Mr. Horrocks and Mr. Pye. Borrowings from the library have amounted to just under 1,000 volumes. Nearly 1,000 map sets have been sold, also 346 sets of geological tracings, 390 sets of pictures, and numerous other special O.S. prints and map extracts.

Once again we extend our warm thanks to the many members who have helped the Association by their active co-operation and participation in the work of the Section Committees, and of the Executive Committee and Council. In special measure, too, we should place on record our appreciation of the work achieved on our behalf by our Clerk, Mrs. Mann, who carries the main burden of the routine office organisation, working with singular success through a period that has not been without difficulties of many kinds and degrees.

ANNUAL CONFERENCE, JANUARY, 1950.

The Annual Conference was notable for the large attendances of 300-400 members at almost all the meetings, and for the high quality of the lectures and addresses given. It was voted by many as being quite the best of the post-war conferences, and we are immensely indebted to our Conference Organiser and colleagues who contributed so largely to the success of the meetings.

Miss G. M. Hickman gave an instructive and well illustrated lecture on changes in life in North Africa and to Professor Estyn Evans we are indebted for a striking traverse of North America "from Portland, Maine, to Portland, Oregon." Dr. Harrison Church gave us a stimulating address on changes in West Africa, based on his recent extensive travels in this region.

Many aspects of geographical education were discussed in the course of a "Brains Trust" (with the chairman of our Secondary Schools Group, Mr. C. B. Thurston, as question master), and in a lecture by Mr. N. V. Scarfe on the teaching of Geography in the U.S.A. Special mention should be made of a fascinating lecture by Mrs. M. Long in which she summarised the results of her researches into the geographical interests at different ages of children in secondary schools. To Mr. Guest we are indebted for a stimulating discussion on Films in the classroom.

Mr. Gilbert paid tribute to the work of Sir Halford Mackinder in an address which we hope may be published at an early date. Our President, Sir Harry Lindsay, delivered his presidential address at the House of the Royal Geographical Society, where once again we enjoyed lavish hospitality. We are grateful to the Council of the R.G.S. for their kindness, and to the Westminster Branch once again, for generously inviting so large a gathering of members to tea at the London School of Economics. Despite many "domestic" difficulties, our Hon. Conference organiser, Mr. Beaver, arranged a well attended dinner in the new Staff Dining Room at the London School of Economics. To him a very special word of thanks is due for this and for the valuable publishers' exhibitions organised in association with our meetings.

Our grateful thanks, finally, are due to members who organised and carried through the field excursions on Saturday, after the Conference had closed in London.

SPRING CONFERENCE, 1950.

As announced in the December issue of *Geography*, the Spring Conference is to be held in Cornwall, with headquarters at Falmouth, from April 11th to 15th. Members who wish to attend and who have not registered their names with the Conference Organiser, should write immediately to Mr. Ivor Thomas, 19, Tremeadow Terrace, Hayle, Cornwall.

The Conference will open at 4.30 p.m. at the Conference Hall, on Tuesday, April 11th. An interesting programme of field excursions and lectures on various aspects of Cornish geography has been arranged, and the speakers will include Professor Wooldridge ("Some aspects of the physiography of Cornwall and Devon") and Professor Bowen ("The Travels and Settlements of the Celtic Saints in Cornwall") in addition to the programme of speakers already published, and including the names of Sir Cyril Fox, Dr. Hendriks, Mr. Hamilton-Jenkin and others. The meetings end with field excursions on Saturday, April 15th, to Truro and Penwith.

REMOVAL OF HEADQUARTERS.

After twenty years residence in Manchester, by invitation of the Manchester Education Committee, at the Municipal High School of Commerce, the Association has had to seek accommodation elsewhere as the rooms occupied are required for other purposes.

The Council of the Association has expressed keen regret at having to leave Manchester, and its thanks and gratitude to the many who, during two decades, have done so much in that city to further the work and interests of the Association.

Alternative accommodation has been provided in one of the Branch Libraries of the Sheffield Public Libraries, and we are deeply indebted to Sheffield for the generous terms on which this offer has been made. All correspondence to Headquarters should be addressed after April 30th, either to: The Hon. Secretary, Geographical Association, c/o The Dept. of Geography, The University, Sheffield, 10, or The Geographical Association, c/o The Park Branch Library, Duke Street, Sheffield, 2. It will greatly facilitate the work of reorganisation in the new quarters if members would restrict to a minimum correspondence for which an answer is required, during the months of April and May.

The Association extends its warmest good wishes to Mr. T. W. Freeman on his appointment to the Readership in Economic Geography in the University of Manchester, whose creation was one of the late Professor Fitzgerald's last acts on behalf of his Department, and to Mr. E. V. Lane, formerly of Lancaster Training College, who succeeds Mr. Freeman as Senior Lecturer in charge of the Geography Department of Trinity College, Dublin. We wish also to offer our congratulations to Mr. S. H. Beaver on his recently announced appointment to the chair of Geography at the new University College of North Staffordshire.

It is with much regret that the Association learns of the untimely death at Cambridge on 27th January of Mrs. M. R. Mann, better known to readers of her successful text book as Margaret Shackleton.

The Department of Geography, University College, Leicester, informs us that the University College Library set of *The Land of Britain* reports of the Land Utilisation Survey lacks the part for Derbyshire. If any member has a copy of this part which can be spared, either for gift or sale, will he or she communicate directly with Mr. Jennings, at the Department of Geography, University College, Leicester.

PROPOSED VISIT OF TEACHERS OF GEOGRAPHY AND HISTORY TO SWEDEN

In 1947, the Swedish Institute, with the co-operation of the Historical and the Geographical Associations, arranged an exchange of geography and history teachers between Great Britain and Sweden. The scheme culminated in an extremely successful visit of English teachers to Sweden in the summer of 1947, with a return visit of Swedish teachers to this country in 1949.

The enthusiastic reception on both sides has prompted the Swedish Ministry of Education to grant funds to subsidise another such visit for British teachers to Sweden in the summer of this year.

The programme will be on approximately the same lines as in 1947—one week of instructive sightseeing and one week of lectures, visits to schools, excursions, and the like. The proposed number of members should be the same as before, i.e., 25 in all, with approximately equal numbers of men and women.

It is also felt that most benefit would accrue to the members if the geographical participants had some historical interests, and vice versa. With the State grant, the total expenses for each member should not exceed £25, though this does not include the fares across the North Sea. Owing to the very heavy bookings to Sweden during the summer, it has been found necessary to reserve accommodation already, so that the group are due to leave England on August 12th, and to leave Sweden for the return journey on August 29th.

Any member who is interested in this venture should communicate as soon as possible with the Hon. Secretary, Dept. of Geography, Sheffield University.

BRANCH NEWS.

It is thought that the following account of a lecture given to the South West Essex Branch of the Geographical Association, on November 23rd, 1949, may be of general interest. The speaker was E. W. H. Briault, M.A., Ph.D., who gave a talk on "Field Work in Secondary Schools."

Dr. Briault warned the meeting we were in a time of change in geography and that geographers would have to consider the impact of social studies on their subject. A sense of reality and a sense of discovery are essential in geography and the speaker emphasised that field work helps largely in this. Dr. Briault recommended taking a whole class out in school time (see Norwood report). Points of organisation must be carefully worked out by the teacher beforehand, and as much variety as possible should be a feature. He stressed that no verbal description should be given beforehand by the teacher, but after the excursion the children could give it themselves. The common experience thus obtained (on a field excursion) could be used repeatedly. Dr. Briault spoke highly of field work done at school camps, and Field Centres such as Juniper Hall, Dorking, Malham Tarn, Flatford Mill, etc. The ideal would be for every class to get a fortnight at such a centre. Work of high geographical value could be done, but not only in geography. He said the geography of an urban area was complex and not always easy for children. In his opinion we ought not to over-emphasise local studies, but use local interest to gain understanding of the world. In other words, lead out from the local to the general study of the world. Questions followed and the meeting closed with a vote of thanks to the lecturer proposed by the President, G. A. German, Esq., M.Sc.

A CORRECTION.

The Editor's attention has been drawn to a mis-statement in the review of the film "The Rhône Route" which appeared in the December, 1949, issue of *Geography*. Reference was then made to "the route of the pylons which carry electricity from the dam in the Alps to Lyons." The dam in question is not in the Alps but at Genissiat where the Rhône cuts a defile through a ridge of the Southern Jura.

JUNIPER HALL FIELD CENTRE.

The attention of geography teachers is called to the facilities offered by the Council for the Promotion of Field Studies for field work in geography, especially at the Juniper Hall Field Centre near Dorking, Surrey, on the north-western margin of the Weald. From early spring until late autumn, geography courses, usually of one week, are given at frequent intervals. The courses are under the direction of the Warden and resident staff of the Centre. They include vacation courses for teachers and courses (in term or vacation) for school pupils and training college students.

The courses include conducted excursions alternating with periods for practical work in the recording and interpretation of observations. The subject matter is the physical and cultural landscape of representative parts of the Weald, the Chalk Downs and the southern margin of the London Basin. The region affords excellent material for the study of physical and human aspects of the Cretaceous-Eocene scarplands of southern England. Juniper Hall is situated in the centre of the river Mole basin, a typical unit of the Wealden drainage system.

During the 1950 season, there will again be a number of geography courses for sixth form grammar school pupils. Boys or girls may attend singly or in small or larger groups from any one school, with or without a member of the teaching staff. Considerable advantages to both teachers and pupils derive from the combination of groups from widely scattered schools.

The geography courses for spring and early summer are now fully booked. Other courses will be arranged for the autumn term, 1950. There are still vacancies in the following geography courses:—

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|-----------------------|---|
| August 2nd to 16th | .. Teachers and others, for one or both weeks (Course arranged by London University Department of Extra-Mural Studies). |
| August 16th to 30th.. | .. Geography candidates for London University External Degree examinations (Particulars from the Deputy External Registrar). |

Information about other vacancies, domestic arrangements, fees and grants may be obtained from the Warden of Juniper Hall, Dorking, Surrey, who can also furnish information about other of the Field Centres.

FILM MEETINGS AT THE ROYAL GEOGRAPHICAL SOCIETY

The Royal Geographical Society, on the recommendation of its Education Committee, has inaugurated a series of film meetings for teachers of geography, as well as Fellows of the Society, with the object of making known the films available for use in schools and of providing opportunities for their discussion.

At the first meeting, held on December 6th, with Mr. G. J. Cons in the chair, there was an encouraging attendance of about one hundred and forty. The three films shown were among those sponsored by the National Committee for Visual Aids in Education. The first film "Farmer and Goatherd," edited from "Cyprus is an island," was introduced by Dr. E. W. H. Briault as suitable for the age range of 9-11 years. Mr. Ring introduced the second film "Draining the Fens" (13 age group), also from re-edited material with a map, animated diagrams, and a commentary added. Dr. Briault then introduced the third film "Rhondda and Wye", a visual essay in comparative geography, which he had made on the suggestion of the 15 years-plus panel to a specially prepared brief. The film showed the human responses evoked in neighbouring but differing environments, illustrated in the ordinary life of the people of the two valleys.

An instructive discussion was opened by Mr. Cons, and among the points discussed were the proper place for diagrams, the value of a commentary, and the advantage of a story for young children. The general opinion was that maps and diagrams should come at the beginning, and that a carefully prepared commentary, particularly where local dialect could be introduced, was valuable, in supplementing the film. The need for careful preparation in class before using such films was emphasized. The value of "Rhondda and Wye," which was so successful in capturing the atmosphere of each region, was recognised as being due to its production *ab initio* under the guidance of a specialist.

In view of the success of this meeting, it is proposed to hold another in the Spring.

IMPERIAL INSTITUTE EXHIBITION GALLERIES.

The newest addition to the Australian Court at the Imperial Institute takes the form of a relief-model map measuring eight feet by six, made by George Philip and Son, Ltd. to Imperial Institute specifications. Besides showing the Commonwealth of Australia itself the map extends to many of the adjacent islands including Australia's Dependencies, Papua, Lord Howe Island, Norfolk Island, and the Trustee Territory of New Guinea. The two famous Phosphate Islands, Nauru and Ocean, are also included and nearly the whole of New Zealand appears in the south-east corner. The map has two novel features: the sea is painted in two shades of blue, a light blue between the coasts and the 100-fathom line and a deeper blue for ocean depths; and upwards of a hundred small model animals—sheep, cattle, horses, etc.—have been placed in appropriate positions in order to indicate, approximately at any rate, the locations of the relevant primary industries. This map forms part of a comprehensive scheme of improvements to the Australian Court, designed to make this Court alone justify a visit to the Institute.

THE TEA BUREAU.

The Education Officer of the Tea Bureau asks us to draw attention to the facilities his organisation can offer to teachers of geography. These include 16 mm. sound films which may be borrowed free, a wide range of visual material available for sale to teachers at cost price, and a permanent exhibition at the Tea Centre at which small parties are welcome if previous notice is given. Further particulars will be willingly given by Mr. B. L. Strange, Education Officer, The Tea Centre, 22, Regent Street, London, S.W.1.

REVIEWS OF BOOKS

MEMBERS of the Library should know that, with very rare exceptions, books reviewed in this journal may be borrowed from the Association's library. The review columns are, therefore, supplements to the catalogue.

Studies in Regional Planning. G. H. J. Daysh, and others.
15.5×25.3 cm. xxiv+223 pp. London: George G. Philip and Son Ltd. 1949. 25/-.

This book consists of a preface and seven chapters: in a wordy introduction it is explained that many of the planning reports so far published show a lack of appreciation of the unity of areas, combined with an inadequate examination of the facts necessary in relation to the environmental circumstances of the areas concerned. This means that Manchester and Salford, or Newcastle and Gateshead may publish their own reports, with little relation one to another, and none to a wider region such as southeast Lancashire and adjacent Cheshire, or the northeast of England. These studies of Professor Daysh and his team cover seven major regions, for each of which there is a map on a 1:633,360 Ordnance Survey base, covered with symbols to illustrate major features, such as amenity areas, coalfields (expanding or contracting in output), holiday resorts and other phenomena. There are no other maps, and in some cases the superimposition of more than one symbol on a coloured base makes the effect confused: further, the map material has a diagrammatic air and detailed line drawings would have been more informative.

All the authors have made a sincere effort to evaluate the problems of the areas with which they deal, and all are concerned with the geography of human welfare. In passing, this reviewer reads with trepidation such statements as "several small villages should be eliminated" and remembers the query of a visitor to a derelict village, "Will the old be allowed to die here?" Mr. A. A. L. Caesar gives careful consideration to the southwest in two chapters, and collaborates with Professor Daysh on the northeast, and is obviously aware of the employment problems of both small and large areas, such as the Forest of Dean on the one hand, and Tyneside on the other. All the authors give some consideration to the interplay of agriculture and mining or industry, and several show a shrewd appreciation of the limited employment possibilities of the tourist trade. This last point comes out particularly well in the long chapter on the Scottish Highlands by A. Geddes and F. D. N. Spaven, who feel that agriculture forestry and industry are likely to prove more satisfactory sources of employment. Professor K. C. Edwards' "East Midlands," is a particularly careful piece of work, and in the map at the end the symbols are more discriminatingly employed than in some other cases. As a whole this book, though expensive, should arouse interest: it bears, however, signs of hasty compilation and could have been improved by careful editing and by a fuller use of illustrative maps and diagrams in the text.

T.W.F.

The Face of Britain: Midland England. W. G. Hoskins.
15×21.7 cm. viii+120 pp. London: B. T. Batsford Ltd. 1949. 12/6

In this fascinating, well-written, and beautifully illustrated volume—the excellent photographs were mainly taken by the author's colleague, Principal F. L. Attenborough—Dr. Hoskins has produced something new in topographical writing. As a historian he has adopted a technique complementary to, and in many ways comparable with that of the geographer in basing his study upon a direct and organised observation of the features of the landscape. The area treated lies chiefly between the Chilterns and the Middle Trent, and may best be termed the south-east Midlands, while the aspects dealt with include the landscape types, the early peopling of the region, the growth of church, monastery and country seat, the evolution of agriculture and the development of village and urban life. The final chapter presents the contemporary scene, giving prom-

innence to such leading industrial centres as Leicester, Northampton, Kettering and Corby.

The closely woven strands of economic and social history are traced with skill and sympathy, and every distinctive contribution derived from material resources and human enterprise which has imparted character to the local scene has been noted. Their interrelations are so well drawn that one may here recognise social history in one of its best and most illuminating forms. Indeed geographers, as practitioners in a sister branch of knowledge, will warmly commend Dr. Hoskins standpoint as epitomised on page 114: "Unless one penetrates beneath the surface, however little, into this past (Midland) life and civilisation, one cannot understand, *really* understand what one is looking at. Truly, history is a fourth dimension: it gives that depth and meaning to the landscape and its buildings without which they make no permanent impression on the mind."

As to facts and their explanation, there is a remarkable wealth of detail within the comparatively small compass of the book, and the author is as much at home with architecture as with agriculture, though his touch is perhaps surest of all, and his pen most persuasive, when dealing with the numerous and sometimes curious old crafts and industries of the region. The geographer would naturally wish for more maps and a fuller treatment of the physical background, though in the latter respect Dr. Hoskins assists far more adequately than is usual for the historian. He is to be congratulated on adding so handsomely, and in such a scholarly fashion to the literature of the Midlands.

K.C.E.

Land Classification in the West Midland Region. West Midland Group on Post-War Reconstruction and Planning. 21.5×29 cm. 48 pp. London: Faber and Faber, Ltd. 1947. 12/6.

This monograph was issued as a guide for post-war planners in the West Midlands and it must be judged on that basis. It represents the interim conclusions that could be drawn from the available information and as such it has succeeded admirably in fulfilling its purpose. The Committee of experts who were responsible for this work fully realised the many factors which enter into an ideal land classification scheme, and these are discussed in one of the early chapters, but in order to provide a scheme that could be produced in time for it to be of practical use, a simple basis was adopted. Two criteria were chosen, soil and site factors, about which there was a considerable amount of information available in map form. A three-fold division into good, medium and poor quality land was based on these two considerations, with two intermediate classes for areas of mixed types.

Owing to the lack of detailed soil surveys over much of the area, great reliance had to be put upon geological information, supplemented by reconnaissance surveys by geographers and soil scientists. In view of this, a description is given of the main types of rock occurring in the West Midlands and the soils generally associated with them. This section is illustrated by a series of sketch maps showing the distribution of each formation discussed. There is also a description of the main relief regions, though again the solid geology plays a large part. Finally a brief discussion of the land classification pattern is given, but, of course, the most important record is provided by the maps included at the back of the book. Three maps on the scale of a quarter of an inch to the mile are provided showing the topography, geology, and land classification in the West Midlands, i.e., Herefordshire, Shropshire, Staffordshire, Warwickshire and Worcestershire.

For the geographer this book, and its accompanying maps, provides a valuable introduction to the study of the West Midlands, but it was never intended to serve as a detailed source book. For the teacher, however, it should be invaluable when dealing with the West Midlands because of the readily available material contained in it.

In view of its purpose, and the conditions in which it was prepared it is difficult to make valid criticisms against it. One matter that might be raised is the showing of a wide area of Carboniferous Limestone in N.E. Staffordshire, due to the inclusion of the so-called Yoredale or Edale Shales with the Carboniferous limestone instead of with the Millstone Grit Series with which they are more closely allied. This error has led to some over-assessment in N.E. Staffordshire, though in all fairness, that area is not strictly speaking part of the West Midlands.

G.T.W.

Inland Waterways. The "Get-to-Know" Series. P. Thornhill. 15.5×21.5 cm. 48 pp. London: Methuen. 1949. 2/-.

This is the second book to be published in this series which plans to assist local studies. By short descriptions, aided by profuse pen and ink sketch diagrams as well as leading questions, the author encourages the reader to learn much about the canals and river navigations of our country. The waterways, locks, inclines and lifts, pounds, stop-gates and staunches, bridges and tunnels, boats and barges as well as the people of the waterways are dealt with severally and at length. The latter section of the book gives an historical review of the topic and looks to the future of inland navigation. There is a map and a table of all the existing waterways with relevant details such as the lengths of the canal tunnels. No one, whether youthful or adult, can fail to acquire much fresh knowledge from this book and it will encourage the reader to go and observe the "cuts."

N.K.H.

The County Book Series. South London. H. Williams. 15.3×22 cm. x+415 pp. London: Robert Hale, Ltd. 1949. 15/-.

Mr. Harry Williams is not only a thorough, but also a courageous author. The task he accepted from the editor of the County Series offered no prospect of loitering in pleasant ways, but rather the exploration of an urban expanse which he rightly describes as "a monument to mediocrity." The Thames, in the main, is an effective divide, and London south of the river, lacking a City and a Westminster, offers little to tempt the sightseer to cross from the north bank. Mr. Williams found, of course, some interesting corners but on the whole his thousand miles by private car, his hundreds of miles of travel on public vehicles, and his two hundred miles on foot, depressed him. At times in fact, he became filled with anger. He has made a study of each of the ten boroughs and precedes these chapters with a general outline of economic history. They are followed by a general consideration of such matters as health, recreation, and education. Much of the author's criticism of this unplanned, depressing sprawl of bricks and mortar would equally apply to any other large city in this country. Perhaps he is a little too pessimistic about the effects on the inhabitants, a little too critical of their outlook and habits. He has certainly presented us with a work of value. The publishers and the author are to be congratulated on the numerous excellent illustrations.

H.J.W.

The History of London. M. Honeybourne. 14×21.5 cm. 24 pp. London: The Historical Association. n.d. 1/6.

This little "Teaching of History" pamphlet gives notes on the history of London for teachers in Secondary Modern Schools. It is a brief but competent historical summary intended for those whose time for detailed reading is limited. It maintains a strictly orthodox historical outlook and deals with London as a whole in periods. By keeping to the true historical viewpoint there is very properly little of value to a geography teacher. The geography of London is in fact fitted into one paragraph and erroneously called the geography of the London Basin. Geographers may also find the use of the term "topography" somewhat strange. Two very good maps are included.

N.V.S.

The Lagan Valley 1800-1850: A Local History of the Industrial Revolution. E. R. R. Green. 14.5×22.5 cm. 188 pp. London: Faber and Faber, Ltd. 1949. 16/-.

This short book provides a wealth of information on the linen industry, and on the genesis of the present political union of Northern Ireland with Great Britain. Written by an historian, the text includes six maps, one of them a block diagram of the physical environment, and geographical factors are given their due value in the synthesis.

The Lagan valley, cradle of the linen trade of Ireland, remained an obstacle to movement until the 18th century. Capital to drive roads and a canal came partly from the growth of local industry and partly from the development of Belfast. This city grew great as much by cotton as by linen. The first cotton mills, importing raw material from the West Indies, were established on the

swift streams flowing from the basaltic escarpment of Co. Antrim in the period following 1780. Skilled domestic linen-weavers were available, wage rates were lower than in Glasgow or Lancashire and so the industry attracted much British capital. Production, encouraged by protective tariffs, was for the home market and did not long survive once these tariffs were removed in 1824. The experience gained was transferred to the linen industry, just as earlier skills in fine linen-working had been learned from Huguenot refugees. Poor transport kept the spinning mills, first to be mechanised, in Belfast near to imported coal supplies. Weaving remained a domestic industry until after the railways arrived and so remains dispersed in small factories throughout the countryside.

This survival of domestic industry as late as 1850 has given a peculiar pattern to the industrial landscape of Northern Ireland where the factory and the small farm exist side by side. Mr Green traces with great care the parallel development of agriculture; of particular interest is his detailed regional treatment showing how soil and history combine to produce the characteristics of the landscape. His correlation of the areas occupied by former domestic cotton-weavers with modern districts of market gardening is suggestive. This part should be read in conjunction with *The Land of Ulster, I, The Belfast Region*, by D. A. Hill.

The Lagan Valley is a book which no geographer interested in Ireland can afford to overlook. Until many similar careful regional monographs on the economic history of Ireland have appeared, geographers studying the present landscape will be without much essential information which they need to interpret their findings.

J.M.M.

Green and Silver. L. T. C. Rolt. 16.5×24 cm. 275 pp. London: George Allen and Unwin Ltd. 1949. 16/-.

The river Shannon and its tributaries are the largest stretch of navigable inland water in the British Isles. As early as 1709 a Bill was presented in Parliament to improve the navigation of the river but it was not until a hundred years later that the system was linked to the east coast by the Grand Canal. Shortly afterwards, the Royal Canal, built by a rival company, provided an alternative route between Dublin and the Shannon. L. T. C. Rolt set out to see these interesting waterways for himself and this book is the result of his travels. He chartered a 26 foot motorboat at Athlone and in the course of three months followed the Grand Canal to Dublin and returned, without difficulty, along the Royal Canal which is generally supposed to be derelict; thence he proceeded up the Shannon and the Boyle river to Lough Key with its thickly wooded islands and eventually southwards to Killaloe, near Limerick. "Green and Silver" is an absorbing book: Rolt's main interest is in boats and railways, but he is an acute observer and his comments on what he saw of Irish life are sound. It is a book suitable for many types of readers: it will appeal to the student of transport for it is an accurate and well documented account of the waterways of central Ireland; it will appeal to those who are interested in boats and boating for it gives practical information concerning the navigation of these waterways and it will appeal also to the general reader because of its lively and readable style. The photographs, by the author's wife, are well chosen and pleasing, and the maps are adequate.

J.P.H.

Irish Geography. *Bulletin of the Geographical Society of Ireland.* 22×14 cm. 44 pp. Dublin: The Geographical Society of Ireland. 1949. 3/-.

We have received the first number of Vol. II of *Irish Geography, the Bulletin of the Geographical Society of Ireland*. Vol. I covered numbers 1-5, 1944-1948. This bulletin is edited by Mr. T. W. Freeman, formerly of the Department of Geography, Trinity College, Dublin, and now Reader in Geography in the University of Manchester. The articles in previous numbers have been concerned with various aspects of Irish geography as are two out of the three articles in this number. In the first, Mr. Freeman gathers up the findings of a field-party at Carrick-on-Shannon in an illuminating discussion. Mr. F. M. Synge gives an account of the glacial origin of the Kilmacanogue Valley, Co. Wicklow, and traces the fertility of the area to the presence of limestone drift. As a sequel to an article in the 1947 issue of *Irish Geography* on "Unglaciated Areas in Southern

Ireland. Professor Linton gives an account of "Unglaciaded Areas in Scandinavia and Great Britain" and suggests further investigation of similar areas in Ireland. There are notes and reviews dealing mainly, but not solely, with matters Irish. This bulletin makes a worthy place for itself amongst geographical journals.

T.C.W.

Mediterranean Blue. Sisley Huddleston. 14.5×22 cm. 132 pp. London: Evans Bros., Ltd. 1949. 8/6.

In an easy narrative style the reader is taken on a tour of Provence, the Côte d'Azur and its extensions into Italy. The descriptions of places are pleasantly supplemented by relevant historical information and folk lore, and it is only occasionally one feels the guide pressing on so earnestly that there is difficulty in keeping one's bearings amid brief references to minor places. The seventeen full-page plates have been carefully chosen and add merit to the book.

N.P.

The Far East: A Social Geography. A. D. C. Peterson. 15×22.4 cm. 336 pp. London: Gerald Duckworth & Co., Ltd. 1949. 21/-.

Teachers of Geography, in schools, will appreciate the attempt which the author has made to bring events and problems up-to-date with respect to the Far East (defined so as to cover areas which fall, for the most part, within what is more generally described as the Monsoon lands of Asia). Mr. Peterson's objective—as stated in the preface—is to focus upon the life of the peoples and their modern problems. In so doing he deals with the historical background of human affairs and with many facets—social, economic and political—of recent and current circumstances. The net result is a work which will be of greater interest to the general reader than the usual kind of geographical text-book, but it is a matter for regret that there are so many kinds of error in the sections which deal specifically with background geographical conditions. These should have been eliminated before publication.

K.G.T.C.

Le Quebec Par L'Image. R. Blanchard. 16.4×24.4 cm. 138 pp. Montreal: Libraire Beauchemin, Ltd. 1949.

The author of *L'Est du Canada Français* will need no introduction to students of Canadian geography. Raoul Blanchard, long associated with Grenoble, has written this short work on the province of Quebec as Professor at the University of Montreal. Much of the subject matter is a summary of his earlier more detailed work. The narrative is smooth and pleasing. A short introductory section on the general physical background is followed by another on phases of settlement; then in ten brief chapters the salient features of the regional geography of the subdivisions of the province are outlined—the northeast, the estuary lands, Saguenay and Lake St. John, the city of Quebec, the Quebec-Sorel lowland, the Eastern Townships, the Laurentides, the plain of Montreal, the city of Montreal, and finally the northwest. Unfortunately the numerous illustrations, designed as a major feature of this book, are in many cases poorly reproduced; they remain most useful, but mar the agreeable impression given by the excellent paper and clear printing. Professor Blanchard's survey is a very useful addition to the limited literature available on the geography of eastern Canada.

H.J.W.

News from South America. G. S. Fraser. 14×22 cm. 224 pp. London: The Harvill Press, Ltd. 1949. 10/6.

After a promising start the book becomes disappointing for those with mainly geographical interests. The quality of the writing is really high even though in parts it reads with the peculiar difficulty of modern poetry. The major factor in limiting the appeal of this book is that individual people, especially literary people, occupy the writer's attention far more than do the country and its inhabitants.

N.P.

Air Communications of Britain and the Commonwealth. Compiled by Pictorial Charts Unit in collaboration with B.O.A.C. 101 × 76 cm. London: University of London Press. 1949. 5/6.

The central feature is a map of the world, on the azimuthal equidistant projection, centred on London, showing the British and Commonwealth trunk and regional air routes, together with a selection of other unspecified air routes. The scale of the map is not stated, but appears to be about 1:80 million, and is too small for examination at anything but ordinary reading distance, and will be unsuitable for class demonstration. The main map is supplemented by three different global representations of the world; these coloured obliques simulate the appearance of the solid globe and serve to correct some of the deficiencies of shape and space relations inherent in the projection of the main diagram, but while one may expect more generalised treatment of the air routes on these, it is unsatisfactory to find no consistency in the basis for selection of routes shown, and it is confusing to discover routes that have no existence on the fuller main map. N.P.

The Red Sea and Adjacent Countries at the close of the Seventeenth Century. W. Foster (Ed.). 15.3 × 22.6 cm. xi + 192 pp. London: The Hakluyt Society. 1949. 21/-.

The three journeys here described were undertaken with very different motives, but covered adjacent country, at much the same time and in face of similar difficulties.

Joseph Pitts, the first Englishman to make the pilgrimage to Mecca, began his strange career by going to sea when still a boy. Captured and enslaved in Moslem country, he was taken by his master on the *haj* of 1685 or 1686; and the portion of his autobiography reprinted here describes the journey from Egypt to Medina and back again. Though an unwilling and spurious convert, Pitt appears to have taken a close interest in all about him, and reports his experiences and impressions with a lively good humour. There is little trace of the "prejudice and bigotry" with which Burton contends that his narrative is tainted.

William Daniel, the second traveller, was a special courier of the East India Company, and in 1700 accepted the commission of delivering an express dispatch to India within something less than four months. It was a noble undertaking, but a race against time has rarely aroused much enthusiasm in the Levant, and Daniel gave up his attempt at Mocha in Yemen. His report describes movingly the geographical and political perils of the Red Sea route, and explains both why he failed, and why John Company so long preferred the Syrian desert route to that by the Red Sea. Daniel's eloquent and sonorous style reminds us of how common was the art of fine prose composition in the age of Dampier and Defoe.

The third narrative is that of Charles Jacques Poncet, a French doctor in Cairo, who went on a hazardous journey up the Nile to Gondar, to treat an affliction of the Negus of Abyssinia. Returning by Massawa and the Red Sea, he met Daniel at Jidda, and like him, visited Sinai. Poncet's descriptions are more lengthy and scientific than those of Pitts, and he deals very fully with the organisation of the Aethiopian court and nation. But this account was obviously compiled in retrospect, and we miss the freshness, and possibly also the accuracy, of the jottings of Pitts.

The editing is very thorough, and it was a happy idea to include in this volume Ludolf's map of Abyssinia (1683), and Ovington's notes on the Red Sea Ports (1696). Pitts' remarkably accurate sketch of the *Ka'aba* and its surroundings makes an apt frontispiece, though it might have been as well to remark in the introduction that (as Burton noticed) this is printed, due probably to an engraver's error, in reverse. For a correct impression, it should be viewed in a mirror.

Sincere congratulations are due to Sir William Foster who has edited this, the one-hundredth, as he did the first volume in the Second Series of the publications of the Hakluyt Society. W.C.B.

Maps and Map-Makers. R. V. Tooley. 19.5 × 25.7 cm. viii + 128 pp. London: B. T. Batsford, Ltd. 1949. 30/-.

Mr. Tooley writes primarily for the collector and amateur of old maps: but his book is a worth-while addition to the school or schoolmaster's library for three good reasons. It is beautiful and beautifully produced, a joy to handle. It provides a readable and adequate general introduction to the history of carto-

graphy for those who do not want to go very deeply into the subject, an introduction hitherto lacking. It is furnished with very ample bibliographies, lists of maps and references, so that even the specialist will find it useful. The plates, some of them coloured, reproducing notable maps, number nearly a hundred, and besides these there are charming vignettes, cartouches and ornaments used as tail-pieces to the chapters, such as the facsimile of "The Present Eddystone Lighthouse, 90 feet high, 1713." Printed maps, not manuscripts, are the main theme of the book, and these are treated in part under the head of the country of origin—Italy, Germany, and so on, in part under the head of the land depicted—Africa, Asia, Australia. Brief biographies of leading map-makers are given, but the text is necessarily very condensed, and a number of slips need correction. *Mappa Mundae* is repeated again and again, and the writer's unfamiliarity with Latin leads to many other mistakes in titles. Henry VIII not Henry VII was reigning in 1542, Gilbert's *De Magnete* was published in 1600, not 1610—to give examples at random. The text of any new impression should be thoroughly checked. E.G.R.T.

Landscape : As Developed by the Process of Normal Erosion.

C. A. Cotton. 14×22 cm. 509 pp. London : Cambridge University Press. 1948 (2nd edition). 47/6.

This is the second edition of a book first published by the Cambridge University Press in 1941. The first edition was produced under war-time difficulties and restrictions, but it was clear from the outset, that Professor C. A. Cotton had placed in the hands of the geomorphologist a work of first class importance. This, the second edition, does not depart fundamentally from the plan and treatment of the first edition but the work is now expanded and the format much improved. The printing has been done in New Zealand, and by using white-art glazed paper throughout the book it has been possible to insert the photographic illustrations in the text instead of collecting them together at the end of the book as in the first edition : this greatly facilitates the reading. The number of illustrations has also been increased, there now being some 170 carefully selected and most striking photographs together with just over 200 block diagrams and sketches. Many of these are quite new and have not hitherto been published. The opportunity has been taken of bringing the book up-to-date and research work which has appeared since the first edition is now incorporated. This has, in places, necessitated considerable rewriting and expansion of the text. With the latter there is little that one can criticise although it is clear that the chapter on grade will need revision in the light of recent contributions to the subject by Professor D. L. Linton. Advanced students will note with pleasure the inclusion of a fairly detailed list of references at the end of each chapter.

It is a pleasure to handle this book and it is certainly a work that all students of geology and geography will want to possess : unfortunately the price, although, perhaps, reasonable by present-day standards, will doubtless deter many would-be purchasers. The provision of several copies of books of this kind in school and college libraries would seem to be the only immediate solution to this problem. W.G.V.B.

Meteorology of Airfields. C. S. Durst. 15·2×24·5 cm. 87 pp. London : H.M.S.O. 1949. 2/—.

Though addressed primarily to engineers specialising in airfield construction, this short booklet has much of interest to offer to the geographer, since it includes valuable summaries of certain climatic factors, and, in particular, several world distribution maps of rainfall, temperature, and pressure based on the most recent information. Another useful feature is a discussion of climatic phenomena by reference to specific examples at actual places, e.g., the reduction of visibility in parts of England by industrial smoke, or the effects of adiabatic heating on descent of air in the lee of the Cairngorms. Altogether, though treatment can hardly be called simple, and a certain familiarity with meteorology is assumed, the book presents a large corpus of up-to-date information not readily accessible elsewhere. There is, too, a considerable geographical basis to the author's presentation—a tendency which is somewhat new (and even perhaps, overdue) in meteorological literature. One or two adverse comments may be made : there are those who would not wholly agree with certain statements on the origin of desert sand-storms, and a number of diagrams carry too much information for easy appraisal. W.B.F.

Aviation Meteorology of South America. Meteorological Report No. 1. 15.5×24.5 cm., 50 pp. London: H.M.S.O. 1948. 5/-.

Aviation Meteorology of the Azores. Meteorological Report No. 2. 15.5×24.5 cm. 89 pp. London: H.M.S.O. 1949. 3/6.

These meteorological reports are exactly what might be expected from their titles and contain excellent summaries of the synoptic meteorology of the areas dealt with together with details and statistical tables for each of the main climatic elements. The reports are well illustrated in all sections but the reproductions of synoptic charts to illustrate various air mass weather types are a specially strong feature. N.P.

Wind at 100,000 ft. Over South-East England. R. J. Murgatroyd and C. J. B. Clews. 21.5×28 cm. 14 pp. London: H.M.S.O. 1949. 6d. (M.O. 499c).

The paper contains the results of an investigation of the winds at 100,000 feet over south-east England, carried out by the authors in 1944-45. Radio-sonde information is normally limited to the lowest 60,000 feet of the atmosphere, and this investigation considerably extends our knowledge of wind flow at a level where pressure is reduced to about 11 millibars. Observations on the drift of smoke bursts on 35 occasions between February, 1944, and May, 1945, were made. The frequency of clear cloudless conditions limits the number of observations.

The marked seasonal reversal of wind direction from winter to summer is important. In winter the westerly winds may exceed 100 knots, while in summer the flow is easterly with only moderate velocities. The rapidity of changes in wind strength are often comparable with those at lower levels, which must call for further thought on the general atmospheric circulation. The work of F. J. W. Whipple is confirmed and expanded. The observed winds are correlated with thermal gradients and a suggested distribution of temperature over the British Isles is made. The troposphere and stratosphere temperatures at Larkhill and Lerwick are compared and the seasonal changes are interesting. This paper is a valuable contribution to our too-scanty knowledge of the circulation in the stratosphere, and serves to stimulate renewed interest in the interrelation of stratosphere and troposphere pressure patterns and wind flow.

R.T.C.

General Cartography. Erwin Raisz. 18.5×25.5 cm. xv+354 pp. London: McGraw-Hill Publishing Co. (2nd Edition) 1948. 36/-.

The first edition of this now standard work was reviewed in *Geography*, September, 1939. For this second edition all chapters have been thoroughly revised to bring them up to date and some new chapters have been added. Although some sections have been very slightly shortened the net result is a book one-third longer than before containing half as many more illustrations. The sections receiving fuller treatment in the new edition deal with map projections (the deficiencies that still exist in the treatment are perhaps inevitable when this subject is attempted comprehensively, yet only as part of a larger work), map reading, statistical maps and diagrams, land use and economic maps. The entirely new chapters dealing with surveying methods and instruments, air surveying and air photo interpretation are concise and clear. The short chapter on Cartography in War, however, falls short of its potentialities by so largely ignoring activities other than American. Altogether this second edition should enhance the book's already high reputation. N.P.

The Ocean. F. D. Ommanney. 17×11 cms. London: Oxford University Press. 1949. 5/-.

For many years geographers have felt the need of a brief introduction to oceanography and Sir John Murray's early volume in this series was familiar to many students thirty years ago. Since that time, however, there have been many advances; our ideas of the floor of the ocean, of the circulation of its waters, and their biology have greatly enlarged through the work of such ships as the *Meteor*, and notably the *Discovery*, under the Falkland Islands Dependencies Survey. Core-sampling to ever greater depths has been developed by Pigott, and we may look for spectacular advances in knowledge when the results of the *Albatross* expedition are fully worked up.

Dr. Ommanney's new volume in the same series provides an astonishingly compact introduction to the subject. It is understandable in the light of the author's work that the biological aspect receives more generous treatment than does physical oceanography. The essentials of the coral reef problem are reviewed in eight pages; submarine canyons get one page; instrumental techniques are well summarised. Some readers might have asked for a little more on the tides, and diagrams illustrating what is known of the vertical circulation would have been welcome. There is, however, a valuable bibliographical guide for those wishing to read further, and a good index. As a scholarly and informed introduction for the general reader this work is much to be commended and many geographers will find it an admirably useful text to remind them of the issues inherent in much of their reading; and in these days its price is particularly welcome.

G.M.

Geography Behind Politics. A. E. Moodie. 13×19 cm. 178 pp. London: Hutchinson's University Library. 1949. 7/6.

States and their people are the concern of the political geographer, and the relation between the two is also the concern of every thinking man and woman. Therefore, such books as Dr. Moodie's should prove of interest to a far wider public than that provided by trained geographers, especially in an age when publicists make such statements as "You cannot contract out of Geography." Such general works as this will be most effective if they are incisive in their argument and positive in their expression: Dr. Moodie has obviously given careful thought to the content of the book, and has drawn his material from the works of many writers, but the effect would have been clearer if there had been more numerous examples of particular states at chosen times, in terms of territory and people. Some of his statements involve large assumptions: on pp. 42-43, it is said that "political unification is more easily achieved in areas of plains than on mountainous terrain . . . only in an advanced stage of political evolution are these distinct units (scattered groups, clans, cantons) brought together in one state." This assumption is of great interest, but it would have been made more convincing if worked out immediately in relation to various countries in Europe, or even of the British Isles: would it then have remained valid?

The book consists of eight chapters, of which the first includes a definition of the scope of political geography: it appears that a state consists of territory and people, and the relation between them. In the same paragraph, however, we are told that "the physical environment falls largely within the purview of Physical Geography, while the distributions of populations and their varying densities are the field of Demography." Later, on page 149, it appears that "disparity in population density is a function of the capacity of land to support its human occupants," subject to physical conditions, modes of life and local standards of living. In other words, the distribution of population is fundamentally a geographical, even if also a demographic concern, and the physical geography of a territory (or a state) is also fundamental to an understanding of its problems. All this the author knows already, but the book might well have been improved by a firmer statement of basic factors and by a more discriminating choice of maps. There are six in this book, of which three are used to illustrate Italian and two Polish frontier problems of a detailed character.

T.W.F.

Acclimatization in the Andes. C. Monge. 14·5×21 cm. xix+130 pp. Baltimore: The John Hopkins Press. 1948. \$2.75.

Most people tactitly assume that unusual external conditions, if continued long enough, leave their imprint on the subject experiencing them, but there have been few attempts to examine scientifically the changes so brought about and the nature of the adaptive processes involved. Dr. Carlos Monge, the director of the Institute of Andean Biology in Lima, Peru, has studied the effect of one such factor, high altitude, upon man and animals for many years and therefore writes with authority on his present subject.

His main argument is that exposure to the "climatic aggression" of the high Andes has resulted in the evolution of a special race ("Andean man") which is morphologically, biologically and in its mode of life distinct from "sea-level man." The adaptive changes undergone by the "Man of the Andes" have enabled him to withstand and maintain himself successfully in the rigours of his particular environment between 3,000 and 5,000 metres above sea-level, but they have also increased his proneness to ill-health and disease when he exchanges

(or is forced to exchange) his native upland for the plains. Naturally, the process can also operate in the reverse direction when it leads to mountain sickness and, very slowly and gradually, to acclimatization.

In support of his thesis, Dr. Monge draws upon two kinds of evidence: that derived from a study of the chronicles of early Peru and, second, the results of modern research work, largely carried out by himself and his school at the University of Lima. The first, collected with industry and scholarship, shows conclusively, that not only the ancient Inca rulers, but also their Spanish conquerors were aware of the influence of climatological and geographical factors on the well-being of the indigenous mountain population and wisely took them into account in their social and colonial legislation—unlike the modern republican states of South America which have largely neglected them. The second type of proof is concerned with the effects of high altitude on human and animal fertility, and is a little less impressive than the first. Although it is well known that rarefaction of the air (both natural and simulated in the laboratory) can adversely affect reproduction, it does not do so always or equally in all species. Little of the existing information is fully established and some of Dr. Monge's results appear not to have been confirmed by more recent work (for instance that of Moore and Price, 1948.).

This is a small book and in its compass of a mere 115 pages endeavours to deal with the vast borderland between geography and medicine. Quite naturally, and possibly intentionally, it does not do full justice to both. The professional climatologist may object that the diverse components of high altitude such as temperature, barometric pressure, humidity and radiation, have not been sufficiently analysed, while the medical scientist might have preferred greater explicitness and a more critical attitude with regard to the specific action of low oxygen tension, insufficiency or inadequacy of the diet and social factors. Again, like most protagonists of worthy and suffering causes, the author occasionally overstates his case or tries the patience of his readers by irrelevancies and unnecessary repetitions (as in the chapter on racial acclimatization).

But none of these criticisms detract at all seriously from the value of Dr. Monge's study. It represents an important contribution to knowledge, and its conclusions apply to mountain communities beyond the confines of the Andes. Apart from a few minor flaws (such as the careless use of "ibid." instead of "idem" in the bibliography) the book is well produced and makes instructive and stimulating reading. It well merits the praise which the late Dr. Isaiah Bowman, formerly President of the Johns Hopkins University, bestows on it in a foreword.

B.M.S.

Visual Aids. Films and Filmstrips. Part II: Geography for Secondary Schools. Educational Foundation for Visual Aids. 1949. Obtainable from the Foundation, 33, Queen Anne Street, London, W.1. 2/9 post free.

The Educational Foundation for Visual Aids is publishing a catalogue of visual materials, at present limited to films and filmstrips. Part II is concerned with films and filmstrips for teaching geography in secondary schools. The needs of junior school work will be dealt with as a part of Part V.

This is a very attractive catalogue, well designed and printed. Films and filmstrips are grouped together under a series of general and regional headings, and are dealt with in one of two ways. Those films and filmstrips which "have a specific teaching purpose" are given about a quarter of a page each for production details and a brief summary of contents. The running time of films is rather vague, being generally indicated in reels. There is no attempt to assess the merits of the films, so that apart from trial or searching for reviews there is no way of sorting the good from the bad. Films and filmstrips which are "of general educational interest" are listed at the end of each section; only the name and reference to source is given, so that distributors' catalogues would have to be obtained for further information.

This catalogue will be found useful not only because it includes many new titles, but more especially because for the first time it brings together and classifies a large number of geography films and filmstrips which can all be hired or purchased from one source.

It is a great pity that the usefulness of this catalogue is prejudiced by a preface which may seriously mislead many users. The preface states that the catalogue has been prepared to meet the need "for a comprehensive list of films

and filmstrips suitable for use in schools," and that "all known sources of information" have been consulted. It gives no indication that the catalogue is a highly selective document or on what basis the selection has been made. With about 1,000 films from dozens of sources loosely classified as "geographical" and an ever increasing number of filmstrips, a selective list is highly desirable but it is most important that users should know the criteria on which that selection is made. A closer examination reveals that all the films actually described (except seven) are from six sources. Checking with two commercial catalogues to hand (G. B. Instructional and British Instructional Films) one finds that all the films listed in the geography sections, of both catalogues, are included, and none relegated to the "General Use" lists or excluded, with the exception of four rather special sponsored films.

The preface claims "The information it includes will enable teachers to select the most appropriate visual material on any topic, without searching through a number of separate catalogues" This, of course, is exactly what everyone has always wanted, but in view of the tremendous undertaking that would be required to make such a claim good, one is inclined to wonder whether the statement shows more courage than understanding of the problems involved. The claim invites comparison with the 1945 edition of the British Film Institute's List of "Geography Teaching and Travel Films," which recommended 139 out of its 800-900 titles. The new catalogue lists about 500 films in all, of which about 200 are selected for detailed treatment and the rest mentioned by name only. Of the 139 recommended films in the 1945 list, only nine are described in detail in the catalogue now under review, and a further 33 mentioned—the latter therefore involving reference to a "number of separate catalogues" and 97 are not mentioned even by name. Some of the films in the 1945 list are now not available and some may have been bettered by more recent films, but there is obviously here a major difference in the policies governing choice. We know that the 1945 list was recommended by the B.F.I.'s Geography Viewing Panel, which has been reviewing geography teaching films for some 15 years for the Monthly Film Bulletin, and is made up of practising geography teachers. It is important to know how the films in the present catalogue were selected, in order to be able to use it intelligently.

One may be inclined also to question the wisdom of making a distinction between films made "with a specific teaching purpose" and those of "general educational interest." This seems to result in the relegation of those films selected from the Central Film Library to a list of mere titles in the "General Use" lists.

Surely the teacher is interested in all material which will help him to attain his own teaching purposes, quite irrespective of the purpose in the mind of the maker. It would be extremely difficult to justify on educational grounds a large number of the films turned out specifically "for educational purposes," and which too often succeed in being dull instructional films suited only for use with formal teaching methods. Perhaps this criticism is rather one of current teaching practice than of the catalogue, but there is no doubt that a large number of the films in the C.F.L. list, well-conceived and well-made by some of the best documentary units, are far more successful in arousing the interest we need in the classroom and giving that near approximation to a personal experience which is the basis of all education than the usual run of "teaching" films. It is heartening, however, to notice that re-edited sections of some of the Colonial Films and *Cyprus is an Island*, have been made by the National Committee and are included and described. It is to be hoped that this is a sign that much more of this valuable material will be made available.

E.F.M.

Look and See. Visual Aids in the Service of the Church. C. Beale.
14×21·8 cm. 112 pp. London: Edinburgh House Press. 1949. 3/6.

This manual on visual aids has been written by the Secretary of the Edinburgh House Bureau for Visual Aids, but it is none the less useful for teachers of geography. It is, indeed, a book that has long been needed. The visual aids described are of wide range—projected still pictures, motion pictures, and non-projected aids. All these are simply but adequately described and there are detailed directions for their use, which will be a godsend to the beginner, while the experienced teacher will find much that he is not likely to despise. There follows a chapter on "How to use these visual aids" in which are discussed with

conspicuous commonsense the time and place and manner of using these aids. The succeeding chapter on "Presentation of Non-projected Visual Aids" gives very useful suggestions on such points as lighting and various methods of display. There is also a welcome discussion on "The Presentation of Films" full of useful warnings and tips. There is a chapter for the beginner—"Making a Start." Another chapter deals with the making and obtaining of visual aids. There is a section listing the main sources of material, libraries for films, slides and film-strips, a list of film-strip makers, and one of film-strip projectors, a list of makers of lanterns and so on. Indeed, there is information where any type of visual aid may be obtained. Finally there is a section giving fully main sources of information. In the text where a fuller discussion is desirable for any particular subject, reference to other books is made. The book is very fully illustrated and the illustrations really illustrate; it is a most valuable publication. T.C.W.

The British Isles. Economic Geographies. A. F. Woodlands. 13×19 cm. 183 pp. London: Newnes Educational Publishing Co., Ltd. 1948. 5/-.

There is a place for an up-to-date junior Economic Geography of our own islands, but this volume does not fill it. The title of the series surely should indicate that use would be made, in simple terms, of some of the mass of available reports on British resources and production. Disappointingly, there is little evidence of such in this book. The attempt to cover in a small book so much ground, including much of the hackneyed "general" geography of the country, means that the treatment is superficial and has led to vagueness. Further, there are too many inaccuracies. There is a negligible amount of quantitative or comparative evaluation. For instance, there is no guidance as to the relative importance of the coalfields in the three pages referring to them. In the 180 pages of the book six contain some statistics and there are six graphs. However, the final short section on communications and trade is a workmanlike and interesting summary.

The pictorial cover is in marked contrast to the pictureless pages within. The author has his "conviction that illustrations can best be assembled in the Geography Room." The reviewer's conviction is that the author himself is the only person who can undertake the search for those illustrations which give the visual evidence (so desirable in a school book on geography) of exactly what he wishes to emphasize in his presentation. Supplementary illustration will duly be provided by the teacher to meet his own needs as interpreter. F.J.C.

Real Geography. Book IV—Asia. J. Fairgrieve and E. Young. 15×21.5 cm. v+103 pp. London: George Philip and Son, Ltd. 1948. 3/9.

This is the fourth book in a series by the joint authors. Ten chapters cover the continent of Asia, each being planned in a similar fashion so that the physical and human aspects of a distinct region are displayed. A well thought-out text which is closely related to the many pictures, some of which have been specially prepared for this work, must induce in the reader a true geographical appreciation. Some chapters are concerned, primarily, with such products as tea (Ceylon), and rubber (Perak), but others deal with distinct regions such as the tundra or an intermontane valley in the Himalayan zone. A third approach is made through a city, such as Baghdad or Tokyo. Whatever the approach, the results are highly commendable, and the interaction of land surface and climate with crops and human activities and institutions may be regarded as the keynote of the whole book. There is a useful summary of the contents of the chapters at the end. It appears to be eminently suited to both secondary modern schools and the lower forms of secondary grammar schools. N.K.H.

Man The World Over : An Introductory Book. C. C. Carter and H. C. Brentnall. 15.8×21 cm. viii+216 pp. Oxford: Basil Blackwell, Ltd. 1949.

This book has such undoubted merits as a textbook that even those teachers who are committed to a syllabus planned on inconveniently different lines, can scarcely resist its attractions. The writers describe the book as "necessary to the fuller understanding of the three succeeding volumes" in the series, "Man

the World Over." Its purpose is to give children, who are beginning their secondary school education, a foundation of essential geographical ideas, which relate to physical and human geography and map interpretation. However, there is nothing stereotyped in the arrangement or presentation of the subject matter. The authors bear in mind the need to build upon the experience of the children and to provide them with abundant evidence, concrete and visual, for the various ideas they have to impart. The pictures are excellently produced and aptly chosen; the maps and diagrams are drawn with admirable simplicity and clarity. These illustrations are found on nearly every page, and together with the explanatory notes accompanying them are an education in themselves. The same sureness of touch and freshness of outlook mark the writing of the text. Simple literary English is used. The quotations which head each chapter, the brief questions at the end, many of which are practical exercises, stimulate thought and interest.

Children would be delighted to use such a book which has the added advantage of being beautifully produced: binding, printing and paper are of high quality.
J.E.P.

Six More Explorers. Living Names Series. J. Walton. 12.2 × 18.4 cm. 76 pp. London: Oxford University Press. 1949. 1/3.

This little book is one of a series: "Living Names," published by O.U.P. Uniform with it in size are others on physicists, biologists, inventors, civil engineers, men of business and reformers, etc. There are two books on explorers. In the first, John Walton writes about Marco Polo, Columbus, Cook, Sturt, Livingstone and Scott. In this book, the second, the "Six More Explorers" include Vasco da Gama, Ferdinand Magellan, Jacques Cartier, Mungo Park, Richard Burton, Roald Amundsen. The price of this modest little book is only 1/3, yet its illustrations include six maps and ten small line drawings. There is no indication for what age this series is particularly designed. The stories of the explorers are related in an interesting manner, suitable for children of eleven years and over to read and enjoy. They can be recommended for the library of any secondary school.

E.M.C.

Looking and Doing. O. Garnett. 15 × 21.6 cm. xv + 143 pp. Oxford: Basil Blackwell. 1949. 4/-.

Miss O. Garnett's book is original in plan, for Part II, "Looking Around Us," is meant to be read simultaneously with Part I, "Round the Year," not consecutively after it. This is fully explained in the well-written "Preface to Teachers," wherein Miss Garnett states her aims. The book is profusely illustrated with excellent, well-chosen pictures, which form an important and integral part of the work. Many children, especially retarded children, will learn more by looking at these magnificent photographs, than they can from reading the text. The text is suitable as suggested for an average child of eight, but would stimulate any class in a junior school. While the book is intended for Primary School children, it should also find a place in the Secondary Modern Schools, for use with backward forms, for whom reading is difficult. Miss Garnett's suggestions for doing are such as will appeal to Primary School children, and are well suited to their age and capacity, but it may be objected that some children will find their time fully occupied in observing and understanding the illustrations, and reading the text, for children read slowly.

The Publishers should note that the review copy was not securely bound and would not stand up to the very heavy usage books receive in schools.

E.H.

Intermediate Map Reading. T. Pickles. 18 × 24.5 cm. vi + 41 pp. London: J. M. Dent and Sons, Ltd. 1949. 3/3.

Designed for the middle forms of Grammar Schools, this book contains a large number of map-reading exercises of various types, which many teachers will find useful. The exercises are too difficult for beginners and it seems doubtful whether sufficient time could be found in most Grammar School geography courses to cover so much ground in the middle years of a five-year scheme.

Good use is made of line diagrams including maps, block diagrams and sections to illustrate land forms, though a few of the simpler diagrams do not

correspond very closely to the maps. The five O.S. map fragments used include two of the six-inch, two of the two-and-a-half inch and one of the one-inch series. It is probable that the choice of the two-and-a-half inch scale correctly anticipates its future popularity for this work. Block diagrams and air-mosaic photographs accompany the O.S. maps. The diagrams are more useful than the photographs; in fact, it is quite certain that the maps will be needed to interpret the photographs, a task which itself needs special training. W.S.

Oxford Junior Encyclopaedia. Vol. II. Natural History. Edited by L. E. Salt and G. Bournemouth. 20×25·3 cm. xiv+486 pp. London: Oxford University Press. 1949. 30/-.

Each of the contemplated twelve volumes of this new encyclopaedia, of which three are now published, deals with a distinctive subject group. Each volume is arranged alphabetically and is independent in itself except for a few cross references. Morphology, functions and behaviour of plants and animals are treated under accounts of better known animals and separate plant groups, and there are many articles on general phenomena and topics such as heredity, flight, migration, evolution, etc. Designed primarily for school libraries and young readers there is no tendency to write down. Technicalities are introduced only where necessary and it is significant how much can be accurately conveyed without the use of technical jargon. The illustrations are numerous and excellent. A most valuable book preceded by volumes on Mankind, I, and The Universe, III (reviewed in these pages June and September, 1949) and to be followed by volumes on Great Lives, Farming, Industry, etc.

R.N.R.B.

A Dictionary of Geography. W. G. Moore. 11×18 cms. 182 pp. Harmondsworth, Middlesex: Penguin Books. 1949. 1/6.

This is a thoroughly unreliable book. It is published as the second of a series of Penguin Reference Books, but anyone who uses it as such—teacher, pupil, student, or interested general reader—does so at his peril. You have been warned.

The one thing on which the author should be congratulated is his courage, which, however, misled him into essaying a task far beyond his capacity. Considerations of space led him to abandon an original intention "to embrace the entire field of geography" and to limit his volume "broadly speaking, to Physical Geography." Even this more limited project would have required a team of professionals for its adequate accomplishment and in dilettante hands the attempt was foredoomed to failure. Examination of the entries shows that Physical Geography is construed as embracing some consideration of all of the following:—astronomy; the figure of the earth; cartography, including survey and map projections; geophysics, geology, geomorphology, pedology, hydrology, oceanography, meteorology, climatology, phytogeography, zoo-geography, plant ecology and physical anthropology. Over this vast field it would be inhuman to expect anyone to display equal competence. But unfortunately, Mr. Moore is so ignorant of some of it that he is unaware when he is omitting key terms. The quality of his oceanography and meteorology may be judged from the fact that his dictionary is innocent of the terms convergence and divergence: his geology and geophysics from the absence of such terms as sial and sima, or the names of any of the geological systems; his ecology from the fact that it knows neither climax nor succession, and his physical anthropology from its unconcern with such matters as cephalic index, ulotrichy, or leucodermy. Nor are his sins only those of omission. His notions of astronomy allow him to define a nebula as "a luminous mass of hot gas in the solar system" (p. 115); his knowledge of surveying is not unfairly indicated by quoting his statement (Triangulation, p. 168) that "the apices of the triangles are indicated by *Bench Marks*" (sic.). In the field of geophysics he can believe that earthquakes take place "under the influence of the folding and faulting of rock strata" (p. 57), and in his article on Isostasy (p. 89) he resorts to italics to tell us that "material from the plains *is* heavier than materials from the mountains." Geologists will shudder to learn that Mr. Moore believes that geosynclines are but synclines of a larger growth (the opposite of his "geanticlines" in fact), and pedologists to hear that he regards *glei* soils as tundra features (p. 71), and "D" horizons as part of the customary designation of soil profiles (p. 131). Of his geomorphology it need only be said that in the

article Fjord (p. 63) we are introduced to "deep, trough-like valleys which had first been cut by streams to below sea level" and that consequent, subsequent and obsequent streams are defined without reference to the dip and strike of the rocks. In the field of meteorology the author is, of course, able to fall back on the *Meteorological Glossary*, though, even here, he cannot resist the temptation to embroider the straightforward statements of that official production. Possibly these embroideries are designed to avoid any question of infringement of Crown Copyright. His climatology is of that variety which defines climatic regions or types in terms of things other than their climatic characteristics, e.g., Cotton Belt Climate (p. 42), and his plant geography allows him to state that "the natural vegetation of the Savannas is grass" without qualification, and in similarly unqualified manner to speak of the "natural covering of grass" making the Savannas "great pasture lands."

These are all substantial, and in most cases egregious errors. It remains to add that even when the matter of the definitions and explanations is correct, its exposition is commonly unhappy and frequently misleading, while in other cases we are treated to definitions that either fall outside the terms of reference of the volume (like Population Density, p. 48, Buffer State, p. 26, or Pidgin English, p. 125) or would normally be sought in any standard dictionary (like wood, grove, thicket, spinney, copse, common and dell, or troglodyte and pygmy). To be successful a geographical dictionary of this kind would need the assistance of a multitude of apposite, well conceived and well executed diagrams: this production has a magnificent but rather irrelevant 16-page photogravure section, and a sprinkling of line diagrams which will suggest to many professionally redrawn versions of the diagrams offered by candidates for the Higher School Examinations, and like them without adequate annotation and destitute of any indications of scale.

A good geographical cyclopædic dictionary is a consummation devoutly to be wished, but the time for it is not, perhaps, yet. It will arise, when it does arise, as a work of co-operative scholarship from which such volumes as this was intended to be will be produced by selection and reduction, and not as this one has apparently arisen, by miscellaneous accretion. The publishers of this work have been unfortunate in sponsoring it: they have a deservedly high reputation for publishing works which combine popular presentation with the fruits of scholarship. In this case the scholarship is too evidently missing and in allowing this state of affairs to occur the publishers have done a considerable disservice, not only to themselves but also to the subject whose popular estimation they, no doubt, hoped to advance.

H.W.L.

THE LE PLAY SOCIETY

Summer Programme of Field Study Meetings, 1950

AUSTRIAN TYROL: Leave London August 3rd; return August 19th.

Centre: Mayrhofen, Zillertal: 14 nights there: optional extension to Innsbruck or Oberammergau. Leaders: Professor J. Sölch, University of Vienna, Mr. J. C. Priestman, Miss Margaret Tatton, etc.

Auvergne: Leave London August 9th; return August 25th.

Centre: Clermont-Ferrand, Puy-de-Dôme. Leaders: Professor Arthur Davies, and Miss L. B. Gamlen. Varied Excursions.

UNIVERSITY STUDENTS' GROUP: Norway arrangements will be announced soon.

EXETER: Thomas Hall. Excursions to Dartmoor and South Coast. Tennis. Leaders: Mr. J. L. Oliver and Miss E. M. Tuke.

ANNUAL INTERNATIONAL CONFERENCE, Somerville College, Oxford: Leader: Sir E. John Russell. December 29th, 1950, to January 3rd, 1951.

All correspondence to:

Miss MARGARET TATTON, Director, The Birlings, Birling Gap, Nr. Eastbourne.

Geographical Articles in Magazines Received.

CONTINUED FROM VOL. XXXIV, pp. 185 and 186.

A of G—Annals of the Association of American Geographers. A of Sc.—Advancement of Science. BE—Bulletin de la Société Royale de Géographie d'Egypte. GJ—Geographical Journal. GR—Geographical Review. IA—International Affairs. J of G—Journal of Geography. MW—Mitteilungen der Geographischen Gesellschaft Wien. NGT—Norsk Geografisk Tidsskrift. PGA—Proceedings of the Geologists' Association. SAJ—South African Geographical Journal. SGA—Svensk Geografisk Arsbok. SGM—Scottish Geographical Magazine. SR—Sociological Review. TPR—Town Planning Review. UE—United Empire.

AFRICA.—D. R. BUXTON, GJ, Oct.-Dec., '49.—The Shoan Plateau and its People: An Essay in Local Geography. D. D. CRARY, GR, Oct., '49.—Irrigation and Land Use in Zeiniya Bahari, Upper Egypt. O. G. S. CRAWFORD, GJ, July-Sept., '49.—Some Medieval Theories about the Nile. T. J. D. FAIR, S.A.L., June, '49.—Durban: Its Sphere of Influence as a Regional Capital. W. B. FISHER, S.G.M., Sept., '49.—Notes on the Indians of South Africa. S. V. FORBES, S.A.J., June, '49.—Col. R. J. Gordon's Contribution to Cape Geography. H. R. JARRETT, SGM, Dec., '49.—Major Natural Regions of the Gambia. H. R. JARRETT, GR, Oct., '49.—Strange Farmers of the Gambia. G. W. MURRAY, BE, Nov., '49.—Dessication in Egypt. P. SCOTT, GR, Oct., '49.—Otter-Trawl Fisheries of South Africa. J. H. WELLINGTON, GR, Oct., '49.—Zambesi-Okovango Development Projects. J. W. WRIGHT, GJ, Oct.-Dec., '49.—White Nile Flood Plain and Proposed Control Schemes.

AMERICA.—W. O. BLANCHARD, J of G, Nov., '49.—Panama Canal scheduled for a Major Operation. G. F. CARTER, GR, Jan., '50.—Evidence for Pleistocene Man in California. W. N. HARRIS, J of G, Oct., '49.—Puerto Rico—Island of Extremes. C. B. HITCHCOCK, GR, Oct., '49.—Empresa Borsari: Italian Settlement in Tierra del Fuego. R. L. IVES, A of G, Sept., '49.—Climate of Sonoran, Desert Region. R. L. IVES, J of G, Jan., '50.—The Sonoyta Oasis. E. W. MILLER, J of G, Nov., '49.—Mineral Fuel Situation in the United States. J. J. PARSONS, GR, Jan., '50.—Recent Industrial Development in the Gulf South.

ASIA.—W. M. DAY, SGM, Dec., '49.—Relative Permanence of Boundaries in India. B. H. Farmer, GR, Jan., '50.—Agriculture in Ceylon. T. HARRISSON, GJ, Oct.-Dec., '49.—Explorations in Central Borneo. S. MCUNE, GR., Oct., '49.—Geographic Regions in Korea. H. A. SMITH, IA, Oct., '49.—The Jordan: Problems of International Water Control. H. J. WIENS, GR, Oct., '49.—The Shu Tao or Road to Szechwan.

AUSTRALIA.—D. F. THOMSON, GJ, July-Sept., '49.—Arnhem Land: Explorations among an Unknown People.

BRITISH ISLES.—M. A. ARBER, GJ., Oct.-Dec., '49.—Cliff Profiles of Devon and Cornwall. H. G. CHAMPION, A of Sc., Jan., '50.—The Future of our New Forests. M. M. COLE, SAJ, June, '49.—Elgin: A Land Utilization Survey. K. G. FENELON, A of Sc., Jan., '50.—Britain's Food Supplies. F. FRASER DARLING, SGM, Dec., '49.—History of the Scottish Forests. E. W. GILBERT, GJ, July-Sept., '49.—Growth of Brighton. P. M. HOBSON SGM, Sept., '49.—The Parish of Barra. D. L. LINTON, SGM, Dec., '49.—Some Scottish River Captures. D. R. MACGREGOR, SGM, Sept., '49.—Town Development and Transport: North Berwick and Haddington. A. E. SMAILES, A of Sc., Jan., '50.—Early Industrial Settlement in N.E. England. B. W. SPARKS, PGA, Sept., '49.—Denudation Chronology of the Dip-Slope of the South Downs.

EUROPE.—A. J. BULL, PGA, Sept., '49.—A Possible Origin of the Alps. W. J. CAHNMAN, GR, Oct., '49.—Frontiers between East and West in Europe. W. CALEF, J of G, Dec., '49.—Slavic Expansion in the Lands of the Soviet Union. H. A and W. M. MOISLEY, SGM, Dec., '49.—Changing Transhumance in Fjorland. H. SMEDS, GR, Jan., '50.—Replot Skerry Guard: the Northern Baltic.

POLAR REGIONS.—V. H. PATRIARCHE, IA, Oct., '49.—Strategy of the Arctic.

BIOGEOGRAPHY.—W. H. BURT, A of G, Sept., '49.—Distribution and Affinities of Mexican Mammals. A. W. KÜCHLER, A of G, Sept., '49.—

Physiognomic Classification of Vegetation. H. M. SMITH, A of G, Sept., '49.—Herpetogeny in Mexico and Guatemala.

CARTOGRAPHY.—C. B. FAWCETT, GJ, July-Sept., '49.—A New Net for a World Map. R. MILLER, SGM, Dec., '49.—Orthographic Hemispheres Centred on Edinburgh and its Antipode. H. E. SPITTAL, J. of G., Dec., '49.—An Analytical Key to Map Projections.

CITY STUDY.—M. R. G. CONZEN, NGT, '49.—Scandinavian Approach to Urban Geography. F. E. HYDE, TPR, Oct., '49.—Growth of a Town.

CULTURAL.—A. J. A. ARKELL, UE, Jan.-Feb., '50.—An Introduction to African Pre-history.

ECONOMIC.—A. C. GERLACH, J of G, Nov., '49.—Soil Profile Sections: H. NELSON, SGA, '46.—Iandalsälven, the most utilized water power of Sweden. A. D. PERFETTI, J of G, Nov., '49.—Teak-Tropical Hardwood Extraordinary. G. T. RENNER, J of G, Jan., '50.—Some Principles and Laws of Economic Geography. C. J. ROBERTSON, SGM, Sept., '49.—Soil, Population and Trade. G. F. WHITE, GR, Oct., '49.—Toward an Appraisal of World Resources: New Views of Conservation Problems. K. S. WOODS, SR, Sec. 9, '48.—Problems of Country Town Industries.

GENERAL.—A. SØMME, NGT, '49.—Geografien og dens Stilling Nællom de øvrige universitets-og høyskolefag. L. SÖLCH, M.W., 1946.—Albert Penck.

HUMAN GEOGRAPHY.—C. H. MACFADDEN, A of G, Sept., '49.—Use of the Airplane and 35mm. Camera in Field Research. J. M. MAY, GR, Jan., '50.—Medical Geography: Its Methods and Objectives.

PHYSICAL.—S. GRUNDSTRÖM, SGA, '49.—Geomorphological Studies.

TEACHING.—O. W. FREEMAN, J of G, Oct., '49.—Geography: Seen from Education Office. G. C. KIMBER, J of G, Oct., '49.—Place of Geography in General Education. R. F. PEEL, GJ, July-Sept., '49.—Geomorphological Fieldwork with the Aid of O.S. Maps. C. W. SAALE, J of G, Nov., '49.—Instruction in the use of Maps Needs to be Increased. N. V. SCARFE, J of G, Sept., '49.—Type of Geography Taught in Schools of England. G. A. STOKES, J of G, Jan., '50.—The Aerial Photograph: A Key to the Cultural Landscape. D. O. VEGTER, J of G, Nov., '49.—Using Still-Pictures in Geography.

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